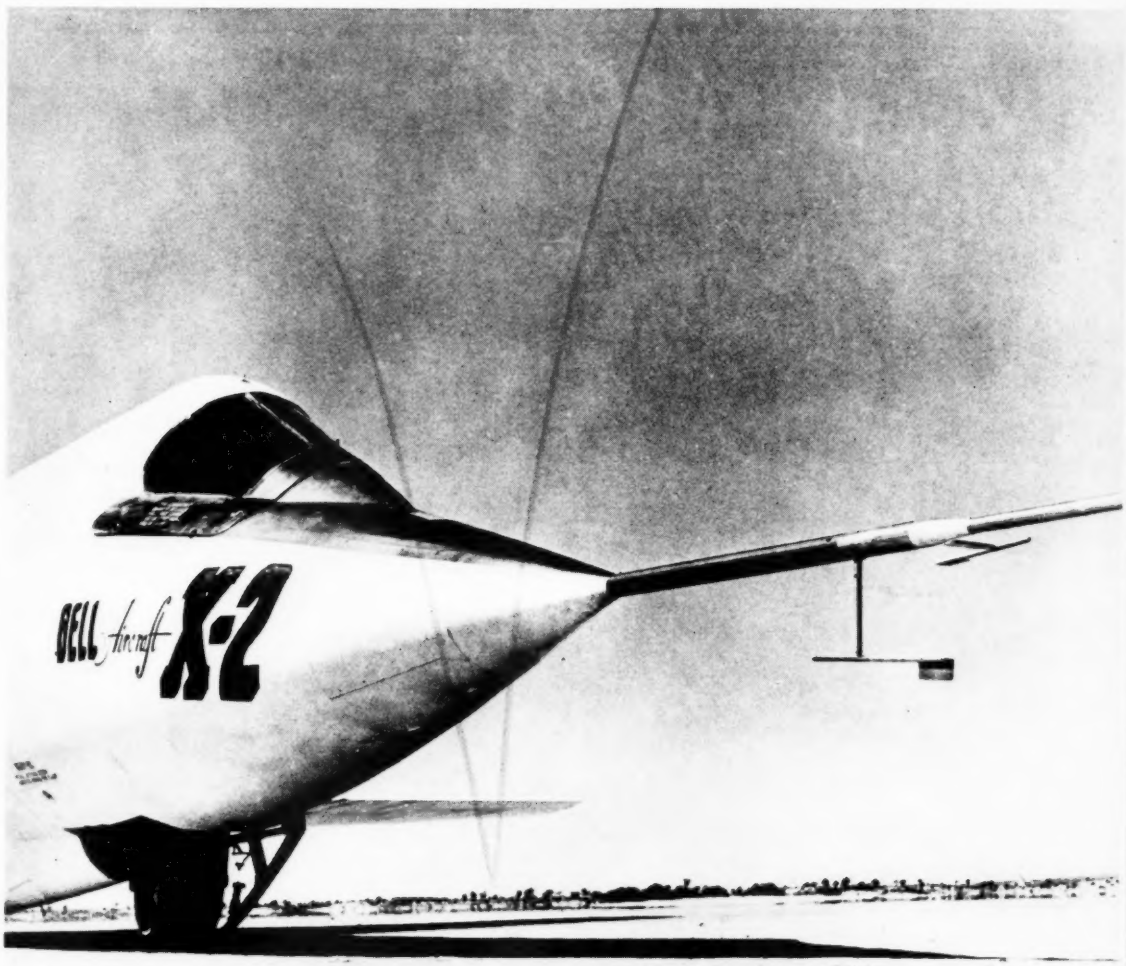
Midwest Engineer

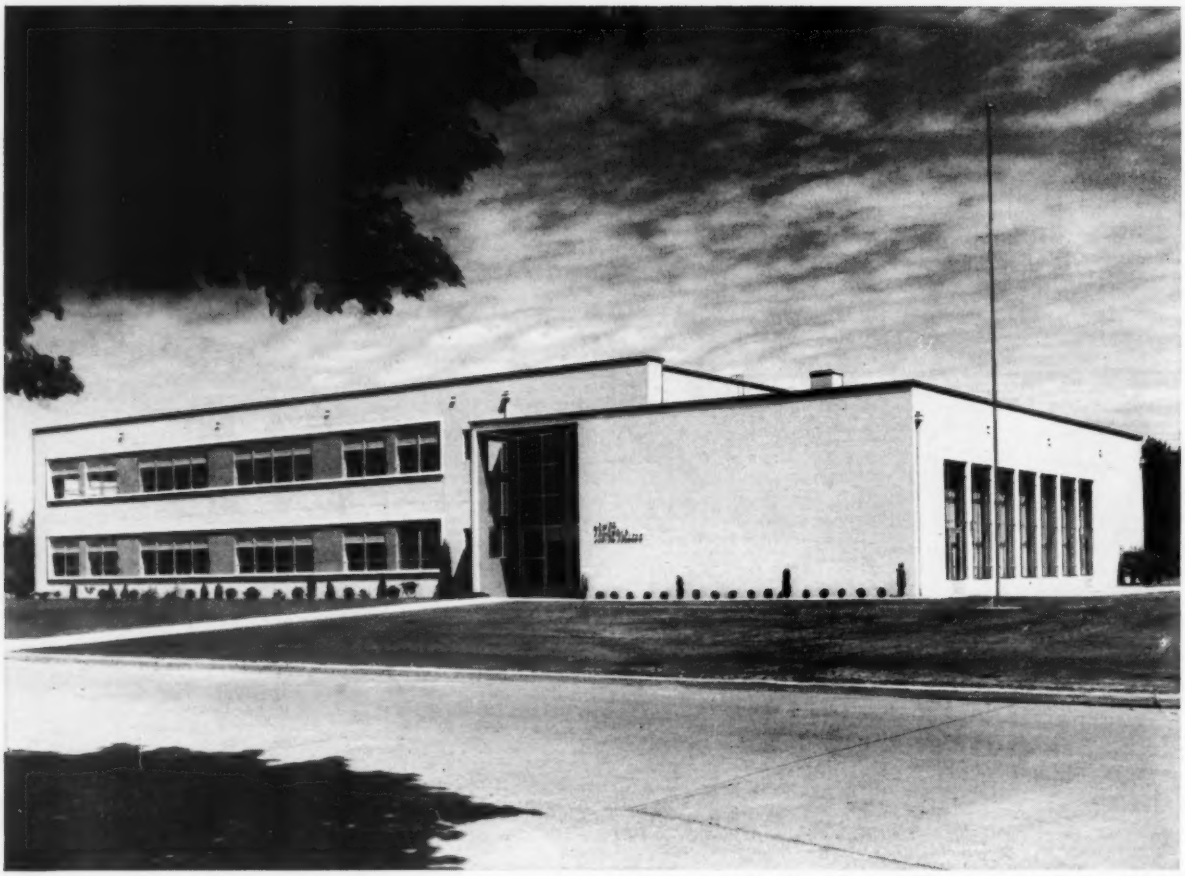
SERVING THE ENGINEERING PROFESSION



WESTERN SOCIETY OF ENGINEERS FOUNDED 1869

PUBLIC RELATIONS—PAGE THREE

Vol. 9 SEPTEMBER, 1956 No. 4



Lower Columbia Jr. College, Longview, Wash., Wolff & Phillips, architects

For Better, Safer Schools Insist on CONCRETE CONSTRUCTION

Every parent, school board member, teacher and student has a vital stake in the type of construction used in school buildings.

Teachers and students are entitled to maximum protection against violent storms, 'quakes, explosions, atomic blasts and fire. Schools built with concrete provide the best safeguard against these ever present dangers. Concrete construction has rugged strength, unexcelled resistance to destructive forces from within and without and maximum firesafety. *Remember, concrete can't burn!* Concrete schools can be designed to meet every structural requirement for buildings of this type.

Concrete schools serve school boards and taxpayers, too. Concrete schools are moderate in first cost, have low maintenance expense and give years of service. The result is ***low annual cost,*** the only true measure of economy in school construction.

Concrete construction is versatile. It can be used in single or multi-story schools of any size, type or style. Concrete offers school boards and architects unlimited freedom in designing school buildings to meet local needs. For additional information about concrete for schools, write for free, illustrated literature. It is distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION

111 WEST WASHINGTON STREET, CHICAGO 2, ILL.

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

MIDWEST ENGINEER
Published Monthly
BY
THE WESTERN
SOCIETY OF ENGINEERS
AT
84 EAST RANDOLPH STREET
CHICAGO 1, ILLINOIS

George L. Jackson.....*President*
Ormas G. Smith.....*1st Vice-President*
William R. Marston.....*2nd Vice-President*
Hjalmar W. Johnson.....*Treasurer*
J. Earl Harrington.....*Executive Secretary*

Trustees:

Robert H. Bacon
John P. Gnaedinger
Virgil E. Gunlock
Arthur R. Harris
Ernest R. Hendrickson
Joseph Kucho
Charles L. Mee
Charles F. Murphy
J. T. Rettaliata
Ernie A. Schmidt
Frank V. Smith
Dick Van Gorp

John F. Sullivan, Jr.....*Past President*
Albert P. Boysen.....*Past President*
James R. McKenney.....*Chairman, Publications Committee*

J. EARL HARRINGTON
Editor and Business Manager

HAROLD K. EATON
Managing Editor

GENERAL AND EDITORIAL OFFICES
HEADQUARTERS OF
WESTERN SOCIETY OF ENGINEERS
84 E. RANDOLPH STREET
CHICAGO 1, ILLINOIS
TELEPHONE: RANDOLPH 6-1736

The Society does not assume responsibility for statements and opinions in articles, papers and discussions appearing herein. All material must be submitted on or before the 10th of the month prior to date of publication.

Copyright 1956 by the
WESTERN SOCIETY OF
ENGINEERS

Permission is given for the reproduction of any material herein, provided due credit is given.

Single Copy .....$ .50
Annual subscription..... 4.00
Foreign subscription..... 6.00

Entered as second-class matter at the post office at Chicago, Illinois under the Act of March 3, 1879.

Midwest Engineer

A Publication of the

WESTERN SOCIETY OF ENGINEERS

Serving the Engineering Profession

September, 1956 Vol. 9, No. 4

CONTENTS

Public Relations 3
Professional Directory 22
ESPS Listings 24
Book Reviews 26
Personals 28
Obituaries 31
Adertisers' Index 31

COVER STORY

The pitot-static probe above gracing the nose of the fastest rocket craft ever flown, the (late) Bell X-2—designed to crack the thermal barrier and recently flown to a world's speed record of about 1,900 miles per hour—is now a production item at Consolidated Avionics Corporation. The heat resistant, stainless steel tube, with its two protruding vanes for registering angle of attack and yaw, was designed and calibrated by the National Advisory Committee for Aeronautics and, until now, has been produced only on a custom basis.

Official USAF Photo

this month at

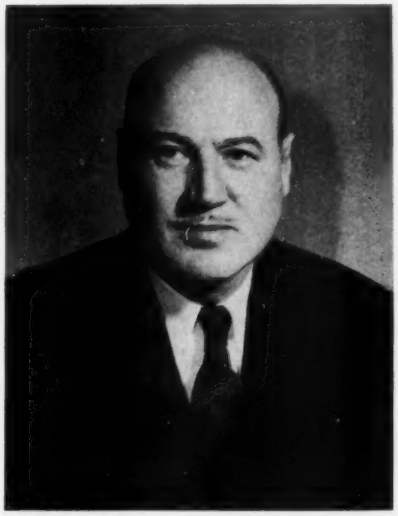
WSE

COMING EVENTS OF INTEREST TO ALL MEMBERS

The Meeting of Oct. 26

Free Cocktail Hour
5:15 to 6:15 p.m.

Dinner
6:30 to 7:30 p.m.



General K. D. Nichols

General Nichols, formerly associated with the Manhattan Engineer District in the development of the Atomic Bomb, will speak on

The Peacetime Development of Atomic Energy

General Nichols was graduated fifth in his 1929 class at West Point. For the next decade or so he saw considerable service, much of it in the educational field.

In 1942 he was assigned as deputy district engineer to what became the Manhattan Engineer District. He became district engineer in 1943 and as such he reported directly to General Leslie R. Groves. General Nichols supervised the research and development connected with the production of plutonium and uranium-235. Also, he had the responsibility for the design and construction of the atomic towns of Richland, Wash. and Oak Ridge, Tenn.

General Nichols subsequently was associated with the government guided-missile program. Later, in 1953, he became general manager for the U.S. Atomic Energy Commission.

In 1955 General Nichols retired from government service to become a consulting engineer. He now maintains his office in Washington, D.C.

Keep the evening of November 19 open for

The Annual Fall Dinner

Remember the Wednesday Noon Luncheons

Time: 12:15 Noon

Adjournment: 1:15 Sharp

Public Relations

By Charles M. Bayer

This is a subject in which a speaker can get knee-deep in platitudes.

And the Public Relations practitioner, addressing non-practitioners, must guard against so preaching his sermon that his audience may feel he regards himself omniscient.

I hope to avoid some of the platitudes. I am not omniscient. I was a newspaper man, of sorts, for many years. For the past several years I have been public relations consultant to ASCE (American Society of Civil Engineers) and, recently, in similar capacity with AIME. I am not an engineer. I am a layman with a wide acquaintance, now, with engineers, and abundant opportunity to observe their objectives and accomplishments and thinking.

My comments here, then, are those of one who, as a newspaper man, wished that engineers—and other professional men—could express themselves clearly and effectively to laymen and who, as the associate now of some of them, has been trying to help them do so.

What is public relations? How does it apply to the engineer? How does the engineer apply it?

That's a lot of ground to cover in a few minutes. I'll touch a high spot here and there and not try to present a complete and profound treatise.

Public relations is an *effort* to earn the appreciation of folks and to develop and maintain that appreciation. It is an *activity*. We cannot sit on the porch and wait for public relations to come along and hand itself over. We have to *strive* for it.

Public relations is not new. But two aspects of it are new. One is the relatively recent public awareness of it. The other is the fast-increasing resort to it. In today's exceedingly competitive world, public relations is a major instrument of successful competition. This realization has impelled innumerable industries to budget large sums in this field and, in many instances, to raise their public relations directors to vice-presidencies and to participation in determination of policy. Public relations has become virtually an indispensable function of management of universities, baseball, clubs, grocery chains.

I have heard such questions as "Why can't engineers get publicity the way the doctors do, or the bankers, or the manufacturers?"

Some of the professions long have done a notable work in this activity—the American Bar Association, the American Bankers Association, the American Medical Association, and so on down the line. Their efforts have been effective because these are unity organizations. Being such, they have public relations departments and professional public relations direction to see to it that their papers and presentations to the public are in the public's language. As unity organizations, taking in all branches of their respective professions, they do an all-embracing effective public relations job. There are exceptions. Sometimes doctors and scientists and lawyers still talk to the public in gobbledygook. In its current, or last week's issue, the *Saturday Evening Post* has an article by a doctor in which he implores doctors, when explaining the ailments under treatment, to talk to their patients in the patient's language, not the doctor's.

Engineering is not yet organized completely. One day, undoubtedly, it will be. When that happens, engineering, too, can establish a thorough-going, all-embracing program of public relations for the profession as a whole. Meanwhile, each engineering society still can do, and in some instances is doing, its own public relations job. The unity program is in the future. In the present, what can we do, as societies, or groups of societies? Why do we want public relations programs?

Engineers want public relations for the same reasons lawyers and bankers and doctors and manufacturers want it. We want public favor. We want it particularly in these highly competitive days when we are trying to induce students to think of engineering as a career. We want it in these days when we are hopeful that parents will appreciate engineering and pass that appreciation on to their student sons. We need it so that we may enroll more members. And we need it because the prestige reflected in public appreciation is one of the important rewards of dedication to a profession.

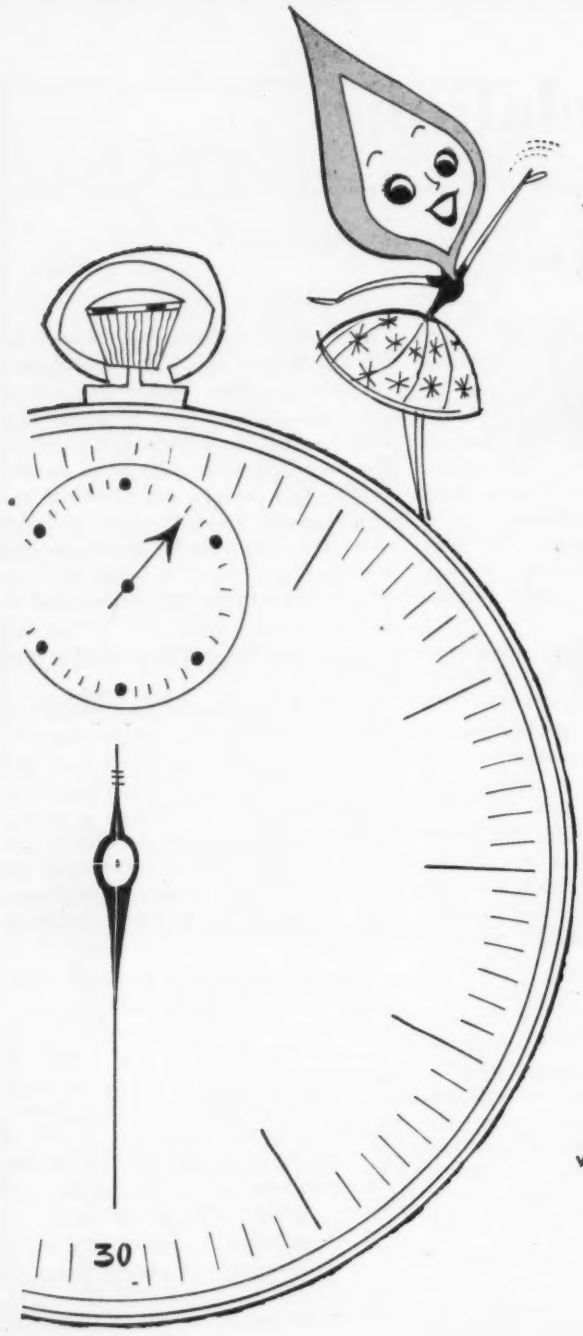
In 1935, the Association of American Railroads undertook a public relations program with the stated purpose of developing better public understanding and appreciation of railroad progress, achievements and problems. That is just what any other concern, whether in industry, education, theater or engineering, is seeking in a public relations activity.

The last, *activity*, is a key word. Some people think of public relations as a magician's trick of pulling rabbits out of a hat. Others regard it as a piece of skulduggery, a clever hiding of facts, of covering up truths. On the contrary, the job of public relations is to expose facts and truths to the public eye so that the public's understanding and approval may be courted and accomplished.

Understanding is another key word. In a recent article of several pages on Public Relations, *Fortune* Magazine said, "Public Relations will grow still bigger. Top management will see to that. . . . Good Public Relations is good performance publicly appreciated because adequately communicated."

Adequately communicated means so presenting your story that it is *understood*. I can illustrate the vital importance in public relations of *understanding*, particularly in the public relations effort of a technological profession, by reading from a public relations memo currently in the mail to Secretaries of the ASCE Sections. I quote myself.

Mr. Bayer presented this talk before the Council of Engineering Society Secretaries at its Annual Meeting in Cincinnati, June 25, 1956.



Penny Flame clocks...

One new GAS customer every 3½ minutes!

For months now Northern Illinois Gas Company has grown at the spectacular rate of one new customer every 3½ minutes of each 8-hour working day. New homes, businesses and industries that came on our system last year totaled 33,462, exceeding the combined population of Glenview, Glen Ellyn and Homewood. The upward trend is continuing and points to another 12 months of outstanding gas growth throughout northern Illinois.

This year we're matching the area's expanding economy with $21 million of additional gas facilities. That figure boosts our investment in new mains and other equipment to over $38 million since 1954. During the next three years, an estimated $53 million in new construction will be required to keep pace with northern Illinois' demand for modern gas service.

Gas Does It **Better**... for **Less!**

NORTHERN ILLINOIS Gas COMPANY

© N. I. GAS CO.

"Before the recent ASCE national convention in Knoxville, a local newspaper man said to a member of the Tennessee Valley Section's Publicity Committee that he was greatly disturbed over whether the civil engineers could tell their convention story to the reading public in the reading public's language.

"The summaries of convention papers, prepared in advance of the meeting, were in the language of the general public. Such convention papers as were so complicatedly technological as to forbid translation into the newspaper reader's language were not summarized for the press. The summaries that were prepared enabled the Knoxville press to give extraordinarily generous space to the proceedings.

"That generous space, however, should not have been regarded as extraordinary, for the subjects of the convention were, in many instances, of major and everyday importance to all persons and thus justified press interest. What was extraordinary was that it seemed natural that the press felt the civil engineers might not be able to tell their story to the public in language the public would understand.

"Perhaps that apprehension was justified. For engineers, as a rule, talk and write to engineers and, therefore, talk and write like engineers. So, too, at times, with lawyers, and doctors and scientists. In general, each category thinks in its own language and addresses itself to itself. This tone of intramural language must be guarded against in whatever efforts are made to communicate engineering's purposes and achievements to the general public.

"It is pertinent to quote from President Enoch R. Needles' convention address:

" 'As a part of doing his job right, the civil engineer should have reasonable facility and skill in the art of communication with the public, his fellow man. If we are to develop understanding of our plans, support for our proposals and proper usage of our facilities, we must convey the proper messages to our fellow men, either by the written word, the spoken word, the adequate delineation or portrayal of ideas by plans or picturization, or other visualization, or the combination of all these means of expression.

" 'Where else can your civil engineer student begin to improve himself in the art of expression better than during his college days? Any curriculum which does not recognize adequately the importance of this tool of the practicing civil engineer is an example of a lost opportunity for very beneficial instruction.'

"It is appropriate, too, to quote from the conventon address of W. M. Leech, Commissioner of the Tennessee Department of Highways and Public Works. Himself a lawyer, he admitted that lawyers, too, have the failing he asked civil engineers to correct. Commissioner Leech urged that 'technical skill alone will not provide a good long-range highway program. Along with the technical knowledge, there must be some everyday, understandable language.' And, he went on to say:

" 'The best plan ever prepared is doomed to failure at its inception unless a majority of the people who are going to have to pay the bill understand it and are willing to accept it.

" 'I am afraid the public in general looks on engineers as so highly technical as not to be understood. Too many of us who are not professionals fail to understand the necessity for some of the work which goes into a well-planned program. The public in general does not understand delays occasioned by soil conditions, drainage problems or securing proper geometric alignment. It is incumbent on the people who develop a long-range plan to translate these problems into understandable language and give it to the public.

" 'I have heard a lot of engineers deplore politics that enter into highway planning. I think some of the politics practiced are deplorable. But all the blame can't be placed on the politicians. There is as much responsibility on the highway planner to make his plan intelligible and understandable so that it will be acceptable to the public as there is responsibility on members of the Legislature to sponsor and vote for progressive, worthwhile legislation.'

"Nor is it out of order to refer to *The New York Times* of June 14, 1956, which said:

" 'A builder of many notable public works advised a group of budding engineers yesterday to learn to 'read and write simple Anglo-Saxon.' The suggestion came from Robert Moses, city construction coordinator and chairman of the Triborough Bridge and Tunnel Authority in the commencement address at Polytechnic Institute of Brooklyn.

" 'Engineers are notoriously bad writers,' Mr. Moses asserted. 'It is precisely because so much of their professional life is concerned with subjects other than engineering that I urge them to rise above the jargon of the trade to what

(Continued on Page 19)

W. H. LYMAN CONSTRUCTION CO.

General Contractors

•

134 N. LA SALLE • CHICAGO • STATE 2-8154

Join the

WSE Field Trip

on Nov. 10 to the

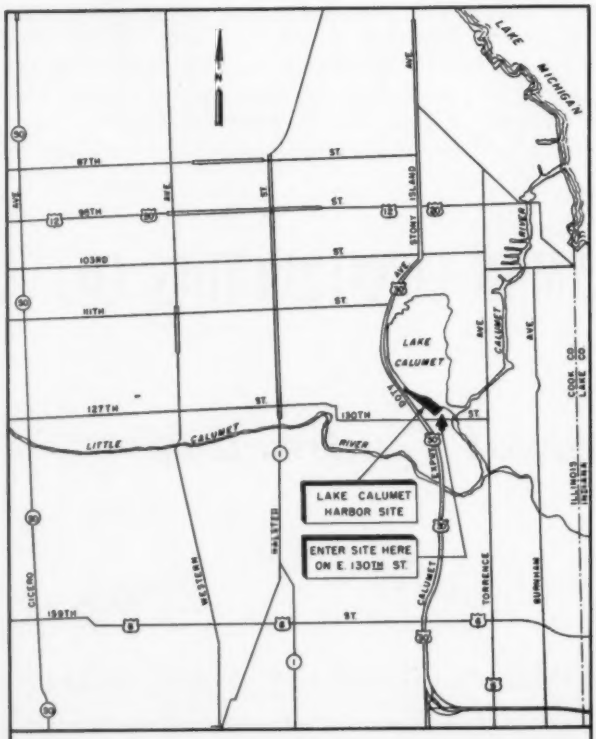
Lake Calumet Harbor Development Project

This vast $20,000,000 project in the area of Lake Calumet on Chicago's South Side is now about 65% complete. Nearly a dozen contractors are involved in the construction work. WSE's Field Trip will make it easy for members to see this huge project at first hand—and the easy way.

DeLeuw, Cather & Company, consulting engineers for the project and sponsor of the WSE Field Trip, will furnish buses for those not wanting to drive. Buses will leave WSE Headquarters at 12:30 p.m. and return to WSE about 4:30 p.m. Reservations must be received by November 5 so that bus arrangements may be completed.

For members wishing to drive, the map below, and "WSE Field Trip" signs strategically posted along the route, will show the way.

Don't forget that date—Nov. 10. We'll see you there!



MAJOR STREETS LEADING TO LAKE CALUMET HARBOR DEVELOPMENT

Three obround 167 kva's on a two-pole structure have less bending moment than three 100 kva older-design transformers.

Here's How L-M's New Obround Design Cuts Construction Costs

The potential capacity of all your transformer structures is greatly increased when you specify L-M's lighter, smaller, obround transformer.

You can now hang three 167 kva obround transformers on a two-pole structure. Three 50 kva transformers or one 167 kva go on a single-pole structure. A 50 kva obround transformer can hang on a Class 2 pole or a 25 kva on a Class 4 pole. This additional pole capacity greatly reduces rebuilding costs.

Less Weight—Shorter Moment Arm

L-M's obround transformer tank design reduces the amount of oil required for cooling and brings the center of gravity of the transformer closer to the pole. The combination of less weight and shorter moment arm distance substantially decreases the total bending moment on the pole and crossarms, and thus increases the potential capacity of all transformer structures. New obround design retains all outstanding Round-Wound® performance characteristics.

For more information on L-M's obround transformer and other L-M products, see Phil McLaughlin, C. W. ("Tiny") Puent, or Bob McGeever; or phone our Chicago sales office and warehouse, Melrose Park; phone Fillmore 4-5570: in Chicago, AUstin 7-6781.

LINE MATERIAL

A McGRAW ELECTRIC COMPANY DIVISION

Transformers—Capacitors—Reclosers
Protective Equipment—Street Lighting
Power Switching Equipment—Regulators
Line Construction Materials—Fibre Conduit

Salt Stabilized Roads May Cut Costs

The State of Ohio is looking to 258 miles of salt stabilized roads scheduled for completion this summer as the answer to rising highway maintenance costs and also the beginning of a stage construction program to surface the remaining 850 miles of similar low-type roads in the state system, it has been announced in Chicago.

It is planned to use salt in improvements of 250 additional miles each year.

"Salt stabilization is an economical method of bringing low-type roads forward in a hurry," in the opinion of C. W. McCaughey, deputy director of the Ohio Department of the division of operations. "It eliminates the necessity of adding aggregate and dust-layer every year. It will reduce maintenance costs over a period of years."

The Ohio program represents the biggest mileage of salt stabilized roads undertaken by any state highway department. It is a significant development in the current mushrooming use of salt in road stabilization.

Experiments with salt as a road building material began about 25 years ago in the United States and Canada, but further experiments with the method were sporadic until after the war. Since 1950, increasing numbers of townships and county highway officials have turned to salt stabilization as a means of stretching road funds. A few state highway departments have built experimental strips or used salt on shoulder stabilization, but the Ohio project is the largest state pavement program of record.

Ohio, like most other states was faced with the problem of inadequate maintenance funds, increased traffic, and demand from rural areas for better secondary roads. Maintenance of its remaining low-type roads was requiring an addition of between 200 and 400 tons of gravel per mile annually, plus labor costs. Material and labor costs of adding aggregate to traffic bound roads average $2.50 per ton in Ohio.

"Rather than continue to pile aggregate on the surface, we decided to try and incorporate it in the base," according to McCaughey.

The decision to try salt as a stabilizer stemmed from successful experiments with seven miles of shoulders stabilized similarly a few years ago, and with four road projects totaling 23 miles built by maintenance crews last year. In the first instance, salt was used as the stabilizer along a seven mile road where the shoulders were narrow and it was difficult to maintain aggregate against the pavement. The shoulders were built up and stabilized with salt and the aggregate held in place.

Additional mileages of salt stabilized shoulders are being constructed this year.

The salt test roads built last year included 11 miles on State Route 284 in Muskingum County from the Morgan County line to Chandlerville; six miles on Route 662 in Guernsey County from State Route 209 to the Muskingum county line; four miles on Route 657 in Licking County between U.S. Route 62 and the Knox county line; and a section of Route 664 in Fairfield County.

Ohio highway officials report that these test sections stood the '55-'56 winter "quite well and showed no failures as a result of frost heave" and that they are in excellent condition now.

Ohio's current 258-mile salt-stabilized program was contracted out of maintenance funds at an estimated cost of $928,849. This figure includes the prime surface treatment and the seal. Improvements call for correction of the profile, but no ditch, drainage, or grade work to be done as a part of the contract. The projects are located in five highway districts in the south and eastern part of the state and range from continuous stretches of a single road down to 1,000-foot strips of rebuilding broken-up areas of old roads.

Traffic volume of the roads in the program ranges from 200 to 400 vehicles daily, composed generally of passenger cars with a variable percentage of commercial vehicles. Over quite a mileage of these roads, however, considerable coal is being hauled from strip mines. These loads are heavy.

All jobs were let on a uniform basis with the same specifications and the state furnishing the salt.

In the test roads built a year ago, Ohio engineers used one-half pound of salt per square yard for every inch of thickness of base. The same salt formula is being used in the 258-mile program. The soil in the various sections varies widely from sandy loams to clay, but the quantity of salt was varied only slightly.

Specifications call for scarifying a minimum of four inches deep, addition of an average of two inches of aggregate

DURAPOLE
ESTABLISHED 1892
The Original
• NON PRESSURE FULL LENGTH TREATED POLE •
VALENTINE CLARK CORPORATION
ST. PAUL 8, MINN.

and three pounds of salt per square yard. This amounts to approximately sixteen tons of salt per mile for a six inch base. (18 foot pavement.)

General supervisor of the program is J. W. Reppel, maintenance engineer. Because of the varying characteristics and condition of the roads to be rebuilt, considerable latitude was left to the division engineers in supervising details of the improvements. Besides selecting locations, they determined thickness of base for each job and depth of surface to be scarified. They also were held responsible for approving the blending and mixing, for amount of water to be added to the mix, adequacy of spreading and rolling, and acceptance of the completed job.

About a week after the stabilization was completed, the project was primed with tar or asphalt. At the end of 30 days, the new work will be sealed with another coating of bituminous material with a cover of aggregate. Routine maintenance will follow with surface improvements as traffic requires and available funds permit.

Senior Officers Data Conference Scheduled

"What Should Senior Officers Know About Automatic Data Processing?" is the theme of a conference to be offered at the Hotel New Yorker, New York City on Nov. 26 and 27 by co-sponsors —the Fordham University School of Business and the Third International Automation Exposition.

Conference director, Gordon L. Mattson, states that the conference program will reflect the rapid strides which have been made in this field during the past year. Widely publicized exaggerated claims for automation are being tempered by experience and results of companies now using the equipment.

This year's conference program will present a detailed examination of problems of considerable importance to administrators. The conference is specifically designed to help administrators obtain sufficient non-technical knowledge about automatic data processing to effectively head up and to lead, at the policy level, the preliminary investigations and installation of the system for their own company.

An important part of the conference program will be the presentation by senior officers of companies and organizations now using automatic equipment. They will present their own case histories of their preliminary studies, conversion and operation of their system. These men will state frank opinions about the benefits and weaknesses of automatic data processing and will disclose pitfalls which others might avoid.

Color TV Lighting Raises Temperature

Lighting for color TV studios generates so much heat that air conditioning must have twice the capacity usually required to lower 95 degree Fahrenheit outside air to comfortable working level, *Electrical World* observes.

CTA Starts Winter Fight During Summer

For its annual battle to maintain transit service during winter's snow and ice, the Chicago Transit Authority is readying a fleet of 320 snow-fighting vehicles, and is stock-piling thousands of tons of salt and sand, CTA General Manager Walter J. McCarter has announced.

This massed fleet consists of 48 CTA trucks, 51 CTA sand and salt buses, 36 CTA rail cars, and 185 rented trucks. Many of the units will be equipped with automatic salt and sand spreaders, or plows, or both.

Among the rented vehicles are 50 revolving drum trucks of 18-ton capacity each, equipped with spreaders and

JOHN BURNS CONSTRUCTION CO.

JOHN F. O'MALLEY, PRESIDENT
CEntral 6-9776
105 WEST ADAMS STREET
CHICAGO

FEDERAL PIPE & SUPPLY CO.

900 S. CAMPBELL AVE.

CHICAGO 12, ILL.

PIPE — VALVES — FITTINGS

PIPE FABRICATION

SEELEY 3-6960

plows, rented from the Materials' Service Corporation. These are cement-mixer trucks whose effective and efficient use for snow-fighting was pioneered two winters ago by the CTA.

Ordered for the coming battle are 5,500 tons of salt to supplement CTA's existing supplies of sand and salt already stockpiled. In the winter of 1955-56, CTA used approximately 26,000 tons of salt and sand to keep its transit lanes open for its buses and streetcars—and private automobiles.

When CTA receives word from weather forecasters that a snow, sleet or ice storm is headed for Chicago, CTA's snow-fighting battalion is alerted and directed to stand-by for orders to go into action.

First units to go to the battle front are CTA's own vehicles. Their work is supplemented, as needed, by the rented vehicles and their crews.

Generally, at the same time, other public agencies, the City of Chicago, the Chicago Park District, the County of Cook and the State of Illinois, alert their snow-fighting forces, and all are combined into a task force. Each agency operates on specific thoroughfares according to a fixed battle plan pre-arranged by these agencies to cover all phases of a snow or ice storm emergency.

To clear a light snow or thin film of ice from traffic lanes, a truck or bus crew spreads salt or sand, or both, the full width of one direction of the street being serviced. Starting the spread about 100 feet back from a transit stop, the crew carries the spread across the intersection, treating an area of 175 to 200 feet adjacent to each transit stop. When a street has been covered in one direction, the traffic lanes in the opposite direction are serviced.

When a heavy snow or freezing rain hits the city, each crew spreads salt and sand in the area of each transit stop, and also at 50 feet intervals between transit stops.

In plowing operations, trucks are generally operated in teams of two or three units. The truck in the inner lane takes the lead, and remains ahead of the vehicle or vehicles in the adjoining lane or lanes. This method moves the snow and ice as close to the curb as possible in keeping with the provisions of the city code.

When a storm heavily coats overhead trolley wires with a sheath of ice, CTA sends out its fleet of sleet-cutters. These are gas buses, each equipped with two trolley poles with sleet-cutting devices. There are eight units in this fleet.

To clear snow from rapid transit tracks at ground level, CTA operates a fleet of rapid transit cars equipped with snow plows. Ice is removed from the electrified third rails by sleet scraper attachments which are fitted to the trucks of the rapid transit cars.

"Speed and proper timing are vital factors in snow fighting," McCarter said. "We cannot let a storm get ahead of us, no matter what the preventive costs may be. Otherwise transit service would become utterly disrupted. In a severe winter, snow-fighting costs may total a million dollars. This is a heavy burden upon local transit riders.

Constructors to Meet Nov. 12 in Cleveland

Fourth annual Construction Conference sponsored by the Construction Division of the Cleveland Engineering Society will be held Nov. 12 at the Society's quarters.

The three session all-day Conference will present nationally known authorities from the fields of architecture, engineering and construction according to A. W. Bailey, Conference chairman. Exhibits by Northern Ohio companies will also be featured, Baily said.

VIKING
AUTOMATIC SPRINKLER CO.
Engineers

For The Design & Installation
Of Fire Protection Equipment

5520 N. Wolcott Ave.
Chicago 40, Illinois
LO 1-4127

161 W. Wisconsin Ave.
Milwaukee 3, Wisc.
BR 3-5711

with the
MURRAYS
its a
Precision Setup

● **If you have a "painting" project and want that satisfying assurance that you will get the most value over the longest period of time, then you should consider the MURRAY BROTHERS and get our recommendations and estimate.**

Our Pride in an enviable reputation is your guarantee of the best

Industrial Painting Contractors since 1924

MURRAY BROTHERS
2438 ARTHINGTON STREET
Chicago 12, Ill., CH. 3-1600

Huts of Wood Defy the Antarctic

Three unpainted wood houses in the Antarctic have withstood winds of hurricane velocity and repeated blanketing under snow for half a century—and "look good for another 50 or 100 years."

This is the report of members recently returned from the Operation Deepfreeze expedition to the Antarctic led by Rear Admiral Richard E. Byrd.

The houses stand as historic monuments to two British explorers who built them as headquarters and subsequently lost their lives on polar journeys. All three houses are on Ross Island, which is about 800 miles from the South Pole. The oldest house was built 54 years ago by Captain Robert F. Scott at Hut Point; the next was built by Sir Ernest Shackleton 48 years ago at Cape Royds; and the third 45 years ago by Captain Scott at Cape Evans.

Dr. Paul Siple, director of scientific projects of the latest expedition and a veteran of all the Byrd explorations, described the houses as in sound condition.

"We saw both the interior and exterior of the Shackleton hut," he said. "The other two were completely filled with snow. Down there, an opening as small as a keyhole will permit drift snow to fill a room in due time. No immediate effort was made to get the snow out because those huts will be treated as museums and detailed records will be made of the conditions discovered.

"The soft grain of the wood on the windward side of Scott's 1902 hut had been etched out as deep as a quarter of an inch by the blasting effect of snow and rock particles driven against it by the wind. Yet, it would probably take another 50 or 100 years to wear down the wood. The harder grain stood out in an interesting, attractive pattern.

"The hut at Cape Evans, quite fully exposed to the elements, showed few blemishes. In the Shackleton hut, in which snow had entered and then melted out, condensation had taken place and steel cans and other metal in it had corroded. However, there was little other damage."

Journals of the early expeditions reveal some of the construction details of the three huts.

Captain Scott described Hut Point, the oldest of the three, as "quite a palatial residence." "The main hut," he wrote, "had been brought from Australia and was, in fact, a fairly spacious bungalow of a design used by outlying settlers in their country." Its floor area was 36 feet square, with overhanging eaves of the pyramidal roof resting on supports some four feet beyond the sides. The supports were buried three or four feet in the volcanic rock. The house had a covered veranda, because it had been designed for the warm climate of the "sheep country" of Australia. It had a double layer of wood sheathing.

Explorer Shackleton had similar praise for his own headquarters at Cape Royds. After returning from a 22-day expedition, he wrote, "We were able to appreciate at their full value the warmth and comfort of our little hut."

The Shackleton hut was prefabricated in London. It was 33 by 19 feet. Shackleton wrote: "It was made of stout fir timbering of best quality in walls, roofs and floors, and the parts were morticed and tenoned to facilitate erection in the Antarctic. The walls were strengthened with iron cleats fitted to main posts and horizontal timbering, and the roof principals were provided with strong iron tie rods. The hut was lined with match boarding, and the walls and roof were covered externally first with strong roofing felt, then one-inch tongued and grooved boards, and finally with another covering of felt."

The four-inch space in framing between the match-boarding was packed with granulated cork, Shackleton said.

"During our first severe blizzard, the hut shook and trembled so that every moment we expected the whole thing to carry away," he wrote.

The third hut at Cape Evans, built by Captain Scott on his second expedition, was described as a "snug, commodius house" by the captain. It was 50 feet long and 25 feet wide. Its framework was lined with two thicknesses of tongue-and-grooved boards, between which was a layer of dried seaweed, quilted in sackcloth. The outer side was also covered with two thicknesses of boarding with seaweed insulation.

Roof and floor also had double boarding with insulation between.

On Jan. 17, 1911 Scott wrote: "We took up our abode in the hut today and are simply overwhelmed with its comfort."

A year and a day later Captain Scott reached the South Pole, only to find that Norwegian Captain Roald Amundsen, using dogs and not stopping for scientific work, had won the race by a month. Captain Scott and four com-

Contracting & Material Company

Engineers and Contractors

★

1235 Dodge Ave., Evanston, Ill.

ROgers Park 4-1295 GReenleaf 5-6960

panions died of starvation, exhaustion and exposure on the way back to their wood hut, leaving a heroic record of what has been described as "the worst journey in the world."

Explorer Shackleton also died on a subsequent journey.

The wood huts they built stand today as three of the most unusual museums in the world.

Trucks Tackle Big And Unusual Task

An entire two-block stretch of 17 homes was moved across town in Fort Wayne, Ind., by truck, reports *Fleet Owner*. The houses were moved three at a time to a site where they were reoccupied by the families who had vacated until the move was completed. Twelve duplex and three single-family dwellings were shifted, each weighing 45 tons; two multi-floor dwellings weighing 55 tons each also made the trip along streets whose trees were trimmed for the move.

THE MONADNOCK
53 West Jackson Blvd.
Chicago 4

LONG RECOGNIZED AS
Headquarters for Office Space
FOR
Engineers
Architects
Patent Attorneys
Manufacturers' Representatives

ALDIS Management

A nationally-known business address

Greenhouse Serves As Giant Test Tube

When automobile manufacturers perfect a carburetor cutoff, its efficacy as a smog preventive will be tested in an ordinary, garden-variety greenhouse at Midwest Research Institute, Kansas City, Mo.

The greenhouse is an important part of the system which scientists at Midwest Research and elsewhere have developed for studying the contribution of the automobile to the smog problem. It was described in a set of two papers presented Sept. 17 at a Symposium on Air Pollution, sponsored by the Division of Analytical Chemistry of the American Chemical Society at the ACS's 130th National Meeting in Atlantic City, N.J.

Dr. John T. Goodwin, Jr., Calvin Bolze, and Dr. Francis V. Morriss were authors of one paper, "Smog Experiments in Large Chambers," and Dr. Morriss, Mr. Bolze, and Frank King were authors of another, "Oxides of Nitrogen in Smog Formation."

"Research in recent years has indicated more and more that the Los Angeles smog is largely the result of photochemical reactions (caused by sunlight) between oxides of nitrogen and hydrocarbons, products of automobile exhaust," the chemical researchers reported. "Members of the Automobile Manufacturers Association are developing a carburetor cutoff which should reduce the over-all hydrocarbon emission due to exhaust about 50 percent. Under the sponsorship of the Air Pollution Foundation, we are doing preliminary work with the objective of defining the conditions under which final testing of such devices should be done."

The smog problem of Los Angeles differs from the air pollution formerly experienced in Pittsburgh and St. Louis. Los Angeles' problem has been the object of a concerted research effort by many laboratories for more than five years.

"Much progress has been made in understanding the causes of this particular type of air pollution, but the severity and frequency of the smog attacks grow annually," they added.

To duplicate Los Angeles' smog in Kansas City, 1,600 miles east, Midwest Research Institute converted a greenhouse into a giant "test tube," with all-glass floor, walls, and roof. By dividing it in the middle with a glass partition, they gained two 2,200-square foot chambers, thus permitting two experiments simultaneously, at the same light exposure, with the same or different intensities of smog.

Numerous analytical instruments are used to follow the changes in chemical concentrations during smog formation. Panels of college students enter the chambers to provide a measure of eye irritation.

"We feel that we have developed a good system for studying the contribution of the automobile to the smog problem," the report concluded. "Now we are attempting to evaluate the part played in smog formation by each cycle of engine operation — idling, acceleration, cruising, and deceleration. We are also trying to determine the effect of changes in engine operating conditions, fuel variables, and other factors."

NASH BROTHERS CONSTRUCTION CO., INC.

Engineering Contractors

1840 South Kilbourn Avenue

Chicago 23

WSE's Seventh Young Engineers' Forum is Under Way

Clifford B. Cox, chairman of the Young Engineers' Forum, has announced that the seventh Forum sponsored by the Western Society of Engineers began on Monday, October 1. The Forum consists of six weekly dinner meetings which are held in the WSE dining room.

The theme for this Forum is again "Engineering in Chicago Industry," and the objective is to provide young engineers an opportunity for broadening their knowledge of engineering in the major lines of business in the community.

The men who have been chosen to be speakers at the Forum are leaders in their particular industries. The program has been planned in such a way that there will be ample time for a question and answer period following the speaker's remarks.

Emphasis will be placed on the young engineers having an opportunity to meet and become better acquainted with the speakers and other leaders in the profession during the social hour in the WSE lounge prior to the dinner meeting.

Following is the complete Forum program:

October 1—PUBLIC WORKS
William J. Mortimer, Superintendent of Highways
Cook County, Illinois

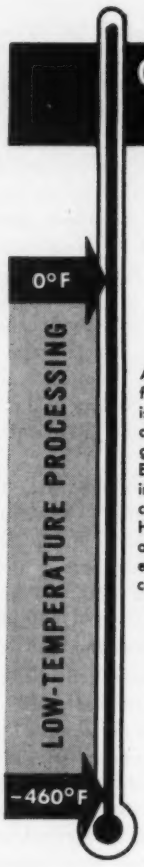
October 8—UTILITIES
Marvin Chandler, President
Northern Illinois Gas Company

October 15—LIGHT MANUFACTURING
John R. Conrad, President
S & C Electric Company

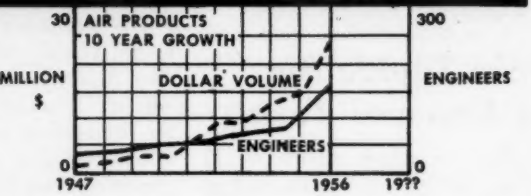
October 22—HEAVY MANUFACTURING
Richard F. Bergmann, Vice President and Chief Engineer
Link-Belt Company

October 29—STEEL
Arch J. Cochrane, Manager of Chicago District
Youngstown Sheet & Tube Company

November 5—RAILROADS
Clyde J. Fitzpatrick, President
Chicago & North Western Railway System



Chemical & Mechanical Engineers OPPORTUNITY



Air Products offers you the opportunity to advance professionally and financially in the field of low temperature processing. The company is the leader in the engineering, design, manufacture, and construction of oxygen plants and systems for the separation of low boiling point gases such as Oxygen, Nitrogen, Carbon Monoxide, Hydrogen, Methane, Ethane, Ethylene and other basic building blocks of the petrochemical industry. We must expand the entire organization to meet the increasing demands of the steel, metallurgical, and chemical industries. Huge plants are being constructed to meet the liquid oxygen demands of the guided missiles program. We need chemical and mechanical engineers who want to share in the growth and profits of a dynamic company in a new and basic industry.

Openings are available in Process Design, Project Engineering, Estimating and Economic Evaluation, Equipment Design, Sales Engineering, Manufacturing Engineering, Supervision of Oxygen Plant Operations and other areas for which you might be qualified. To arrange confidential interview, send resume to Technical Personnel Manager.

Air Products
INCORPORATED
P. O. Box 538 Allentown, Penna., U.S.A.

MECHANICAL ENGINEERS

ALSO HAVE A CHALLENGING OPPORTUNITY

The mechanical group develop, design, and manufacture expansion turbines and engines, and pumps for operation at extremely low temperature (minus 300°F). Also has responsibility for specification and selection of complex power and compression equipment, including centrifugal, rotary, and reciprocating compressors, and steam, gas turbine, Diesel and gas engine, and electric drives to several thousand unit horsepower. In Air Products, the mechanical equipment is an integral part of the process. Excellent opportunity for broad experience with growth potential. Applicants should be oriented in the actual design of machinery.

Dartmouth Adopts New Program

Adoption of a new engineering program by Dartmouth College and its Thayer School of Engineering was announced Aug. 28 in Hanover, N.H. by President John Sloan Dickey. "This program is based upon an engineering science major and is designed to take maximum advantage of Dartmouth's distinctive opportunity to blend liberal arts and engineering education, and at the same time to integrate engineering education increasingly with basic science," President Dickey said.

The engineering science major, leading to Dartmouth's Bachelor of Arts degree in four years, will be the basis of all of Dartmouth's engineering offerings. Programs in civil, mechanical and electrical engineering with emphasis on the basic and engineering sciences, require a year of study beyond the engineering science major and graduates will receive the professional engineering degree of bachelor of science in the branch studied.

Students who wish to continue their study for a fifth year in the basic and engineering sciences rather than in civil, mechanical or electrical engineering will work toward a master of science degree. In view of the national need for a greatly increased supply of engineers, it is contemplated that the enrollment of the Thayer School will be increased.

Since its founding in 1871 by Sylvanus Thayer, the "father of the United States Military Academy," the Thayer School has emphasized the value of a strong liberal arts education as a base for professional engineering study. The importance of this approach is now widely accepted among leading engineering educators.

"The program also meets the two most significant emerging trends in engineering education and practices," explained Thayer School's Dean William P. Kimball. "These are the orientation of undergraduate engineering education toward basic and engineering sciences and the emphasis on 'systems' engineering which requires close teamwork among scientists and engineers of different disciplines. This type of engineering activity emphasizes the importance of basic science in engineering analysis and is resulting in a steady weakening of the boundaries between the specialized branches of engineering."

The adoption of the new program follows a two-year study made under the direction of Dartmouth's Trustees Planning Committee, which is studying all aspects of the College to assure that Dartmouth will bring to its third century a program of higher education of pre-eminent effectiveness. Involved in the study of the engineering program have been consultants on engineering education, members of the science faculty of Dartmouth, and the faculty and alumni of the Thayer School. The consultants were Dr. Gordon S. Brown, head of electrical engineering at M.I.T.; Dean S. C. Hollister of the Cornell Engineering School; and Dr. John A. Hutcheson, vice president of the Westinghouse Electric Company.

In assessing Dartmouth's position in the field of engineering education, the consultants stated: "Dartmouth . . . has a golden opportunity to do two things at once. The first is to train well-rounded men, and the second is to give them a training in the physical sciences that will qualify them for the kind of engineering competence that will have the greatest social value in the future with the maximum potential for creative leadership."

Dartmouth's engineering program gives the student the opportunity of uninterrupted undergraduate study in liberal arts environment, with engineering courses being taken in its Thayer School. The outstanding characteristic of the new engineering science major is that it develops a common core of mathematics, basic science and engineering science courses while enabling the student to take as much as 40 per cent of his college work in humanities and social science. By providing during the first three years a common educational experience for all students interested in engineering, the curriculum permits the student to select the branch of engineering or science for which he is best suited. Also, it gives the student who finds that his aptitudes and interest lie outside engineering an opportunity to move into entirely different fields of study in Dartmouth's liberal arts offerings. The fourth year includes science and branch engineering electives which enable the student to prepare for his fifth year of work in civil, electrical, or mechanical engineering or in engineering sciences.

On completion of the fifth year, the graduate will be qualified for direct employment in an engineering capacity or for additional study at other institutions leading to more advanced degrees. As in the past, it is anticipated that the majority will proceed directly into industry or engineering practice.

The branch engineering curricula will be directed toward professional engineering and, with the increased emphasis on basic science content in the engineering courses, will prepare the Thayer School graduates for careers in the new and developing technologies.

Still Appropriate

Early to bed and early to rise, makes a man healthy, wealthy, and wise.

—Poor Richard's Almanac

ASPLUNDH

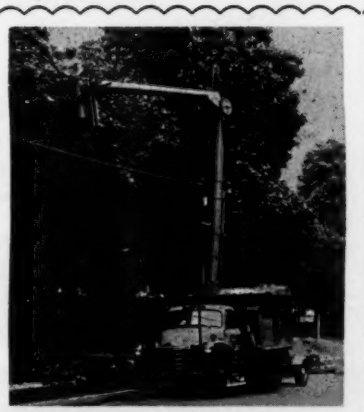
Effective and Economical

LINE CLEARANCE

and Right-of-Way work

Opening of new rights-of-way, and trimming of trees and chemical brush control on existing rights-of-way are operations which should be entrusted only to specialists.

JENKINTOWN, PA.
and Principal Cities



Big Business Ways OK for Others

Big business methods can be used effectively to aid the growth of small and medium sized companies, according to Robert A. Weaver, Jr., president of The Bettinger Corporation, Waltham, Massachusetts. Bettinger is a leader in the field of porcelain enamel and ceramic coatings.

The first in a series of articles entitled "Profile of a New Kind of Manager" appearing in the September issue of *Management Methods* magazine discusses Weaver's approach to the problems of small and medium sized businesses and outlines how big business methods were applied to Betttinger to improve its products and to expand its markets.

According to Weaver, small companies today cannot afford to limit themselves, in most cases, to a single product or a single group of similar products. Rapid and continuing change in the country's economy, he points out, dictates product diversification.

Ten years ago, as noted in the article, Bettinger produced primarily stove parts and enamel metal signs. Today, after a well planned and executed research, development and diversification program, the company produces a complete line of architectural products and industrial ceramic coatings, including wall panels for all types of construction, chalkboards and other products for school, ceramic-on-steel wall tile for domestic and institutional use, corrugated industrial roofing and siding, as well as a variety of industrial ceramic coating processes and parts for everything from jet engines, truck and marine engine mufflers, electronic devices and nuclear equipment "hot parts" to ceramic linings for hypodermic needles.

As a result of product diversification and aggressive selling techniques, Bettinger has increased sales of its wholly-owned units from $100,000 a year in 1946 to its present rate of $2,300,000, a figure which does not include a rate of sales of approximately $3,250,000 for four companies in which Bettinger has a substantial interest, nor does it include revenues from foreign licensees.

"Generally speaking," says Weaver, "small businessmen have avoided public financing because they do not have a clear picture of the specific advantages, or they don't know how to go about getting such financing."

The article notes that at the time Bettinger first turned to public offerings, in 1948, the company had already showed promise of substantial future growth. The company's stock appealed to many investors as a capital gains investment. Consequently, the company was in a position where it could reinvest profits in expansion programs. This benefitted the investor since he would have a much more valuable investment as the company grew. Recent engineering surveys of Bettinger estimated that approximately $3 million has gone into developmental research during the growth program.

For this series of profile articles, *Management Methods* researchers spent nearly a year collecting data on what the new type of corporation manager looks like.

The research revealed that the manager is no longer merely a super salesman, a financial wizard or a production genius. Instead, like Weaver, he is a professional executive—a planner and coordinator who works closely with the various executives with specialized functions needed to run a modern business.

Each article in the series describes the activities of a manager who has demonstrated the new concept of management through the solution of specific problems in his company.

controlled **POLE** production

Bell's *own* timber areas supply selected Western Red Cedar, Douglas Fir, and Western Larch pole stocks to Bell's *own* yards and processing plants where quality controlled poles are produced to your individual specifications.

BELL LUMBER & POLE CO.

MIDLAND BANK BUILDING MINNEAPOLIS 1, MINN.

Boron Production To be Much Increased

Boron, the versatile chemical element which is now heralded as one of the future's most intriguing chemicals, took a long stride toward realizing that future recently when Stauffer Chemical Company revealed that it plans a ten-fold expansion of its Niagara Falls facilities for the manufacture of boron trichloride. Until now boron trichloride—which is an essential base for the manufacture of high energy fuels and missile propellants—has been available in relatively limited quantities. But, say Stauffer executives, by next February when the company's new unit will be completed, the chemical will be manufactured in "substantial tonnage" and shipped in tank car quantities.

Officers of the company declined to comment on the precise tonnage of boron trichloride involved "for reasons of security and policy" nor was any figure cited for the new investment involved.

According to Stauffer, the plant will embody a new process resulting from research which the company has conducted over the past several years. Stauffer pioneered the manufacture of boron trichloride at Niagara Falls in 1944 and has operated a small commercial plant there ever since. It has conducted a good deal of process development work at Niagara Falls and also at a large pilot plant in Richmond, Calif. This has yielded what the company terms as "an economical, new and improved" method for the large scale manufacture of trichloride.

Construction of the addition to the Niagara Falls facilities was scheduled to begin at once. Upon completion, the plant will be the largest in this country for the manufacture of this boron chemical.

Oil Journal to Appear Monthly

Lubrication Engineering, journal of the American Society of Lubrication Engineers will be published monthly beginning January 10, 1957. Closing dates for the first issue will be one month prior to the release date.

R. D. McCormick, publications manager for the society, in making the announcement stated, "Many factors have made it both possible and necessary for the journal to be published at the monthly frequency. Since the journal's founding in 1945, research in this field has increased fourfold. Keeping the Lubrication Engineer aware of the fruits of this research into new methods and materials has been the constant aim of the journal. The only way to provide comprehensive coverage of this tremendous increase in literature is through the monthly publication of *Lubrication Engineering*. Increased competition from foreign manufacturers have placed before the engineer newer and often better materials and methods which will permit improving machine production efficiencies when properly interpreted through the lube engineer.

"Automation has made an impact on the scope and function of the lube engineer in the modern plant, mill, and mine. Without this function we could not have continuous or continual operation.

"The need for 'productive maintenance' programs in the plant has been recognized more and more by plant management through the efforts of the lube engineer. We now have refrigerators which require no maintenance for five or more years; telephone dials that spin endlessly without binding, yet require no lubrication; mills that roll steel forms and sheets 24 hours each day, 365 days a year; and mining equipment that operates flawlessly under all types of adverse environmental conditions—all because of the correct selection of materials and methods by well informed lubrication engineers.

"As material and labor costs continue to increase management must exploit the last frontier of production economies — improved operating methods. The foremost single factor in attaining improved production is the lube engineer. By selecting the best bearings, lubricants, cutting fluids, drawing and tempering compounds, filtration and reclaimation equipment, seals and closures, and all of the accessory items related of the effective dispensing and application of lubricants, the lubrication engineer decreases the down time on production machinery and thereby improves production to cut costs.

"*Lubrication Engineering* has pledged itself to provide increased coverage to this group of scientists and engineers by continuing to report the latest methods and materials available to the science of lubrication for the ultimate benefit of the consumer."

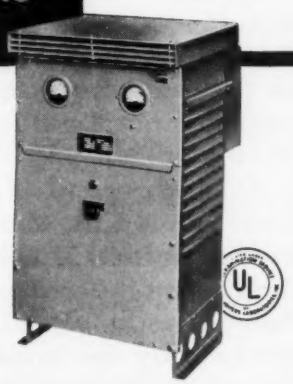
The Wise Man

The Wise Man draws more Advantage from his Enemies than does the fool from his Friends.

— Poor Richard's Almanack

STAVOLT
POWER
RECTIFIERS

30 Standard
U. L. Approved
Models



Mag-Amp Control
Stable, Fast
15 to 1500 amps

- Stationary or Mobile Types
- For Hangars, Air Fields, Missiles
- For Factories and Labs

Write for interesting information to
CHRISTIE ELECTRIC CORP.
Formerly MC COLPIN-CHRISTIE CORP.
27th Year of Rectifier Manufacturing
3410 W. 67th St., Los Angeles 43, Calif.
Represented by
HARRY W. GEBHARD CO.
5129 W. Devon Avenue • Chicago 30, Ill.

ABBOTT CONTRACTORS INC.

•

3349 South Kedzie Avenue

Chicago 23, Illinois

1/2 A MEMBER FOR

= OUR

= 1,000

"Half a Member For Every Member" . . . That's our slogan for our membership drive for the coming term.

Don't expect us to accept the bottom half of a prospective member—bring both halves to make a whole. Just imagine, you'll be doing double duty when you recruit each new whole member!

It might be best if I explained the source of our slogan. First of all, there are approximately 2642½ existing members. Assuming that 642½ are inactive, we end up with a net of 2000. Making another assumption that we will have a 50% participation in this coming membership drive, we find a final net of 1000 new members. Simple, isn't it? Now you try to explain it!

Seriously though, there is no reason why we should not boast of at least 6000 members in W. S. E. There are approximately 30,000 engineers in the Chicago area who could meet our requirements—to ask for 20% of these to belong to W. S. E. is not an impossible request.

Our plan of attack is simple! The total existing membership will be divided among the ten Engineering Sections. Care will be taken to try to place each member in the Section to which his work is related. As an example, a bridge design engineer will be placed in the Bridge and Structural Section. These lists will be attached to a thermometer chart (will appear in next issue) to be displayed at the headquarters. As each member obtains a new member, a credit is shown opposite his name on the list. A tally is also made on the thermometer for that particular Section—thus a visual comparison at a glance may be made to determine how well each Section is doing. We will also have an "honor roll" posted nearby which will list the names of all

EVERY MEMBER GOAL NEW MEMBERS

existing members who have obtained five or more new members. Anyone included on this list can boast and be proud and should be acknowledged for a big accomplishment. We'll also list those who have secured new members on these same pages in future issues.

Now you're probably wondering how to go about obtaining new members. That's easy!!!

(1) Just remember that the non-member will not become a new member UNLESS YOU ASK HIM!

(2) If he belongs to another technical or engineering society HE DOES NOT HAVE TO PAY THE ENTRANCE FEE!

(3) EACH NEW PROSPECTIVE MEMBER IS

(a) put on the mailing list to receive Midwest Engineer and

(b) will receive a courtesy card to gain admission to W. S. E. affairs and enjoy our headquarter facilities.

(4) Each existing member will be supplied with a sales kit in the near future. The big feature of this kit is a pocket envelope containing five business reply cards. Carry this envelope in the breast pocket of your suit—consider the ease of transporting and availability at all times—it'll even bolster those luncheon discussions when the conversation drags.

We can brag about our facilities, be proud of our accomplishments and look forward to a very progressive program in the future. The individual programs sponsored by the various Sections will be announced in later issues of the Midwest Engineer. Let's all go out and get those 1000 new members!!!

Remember-to get that new member YOU MUST ASK HIM!! . . . AND SELL HIM!

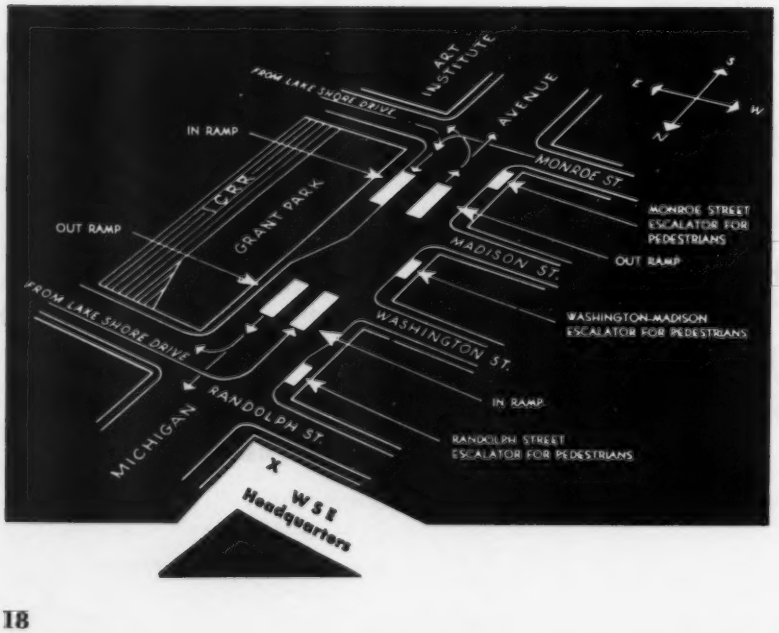
Sincerely,
J. H. Rohlf,
Membership Chairman

SAY, ENGINEER!

Do you like to DRIVE?

Then why not drive to WSE meetings and other functions? There's plenty of PARKING almost at the door—the Underground Garage is diagonally across the street from WSE Headquarters (see the map below), two private garages are a block west, and the State-Wacker "Bird Cage" Garage is only a short distance away.

Below: map showing Park Department Underground Garage



Interior view of Underground Garage

If you're not driving it's still convenient to get to and from WSE meetings.

Here are handy stations or stops:

- The Cab Stand is just across the street
- The Elevated is one block west
- The Subway is two blocks west
- Buses stop at the door or within a few blocks for every part of town
- The IC Suburban station is across the street
- Other suburban stations are conveniently served by bus or elevated.

You see, your WSE Headquarters is at the handiest place in Chicago.

ENTER at either Monroe or Randolph Street on Michigan

EASY access, Speedy exit

ESCALATORS convey you to street level

CAPACITY The garage with its 2359 parking spaces, is designed to prevent overcrowding.

Public Relations

(Continued from Page 5)

(Robert Louis) Stevenson — the Samoan . . . —called a consideration of the art of life.'

"So, there you have it, Civil Engineers. In one week, three men who know what they are talking about urge that when the public is addressed by civil engineers, the language be the public's, not the engineer's. It shouldn't be too difficult, if the effort is made in preparing a Section release on a meeting paper or a community project. For the engineer, too, is a member of the public. And when he talks engineering to his fellow members of the public all he needs to remember is that he's talking to the grocer and the housewife and the mailman and the dentist and the doctor and the lawyer and even the scientist. For each of these, apart from his own speciality, is a member of the general public and should to be talked to away from the 'jargon of the trade'—even though the doctor and the lawyer and the scientist do, themselves, often fall into the fault we speak of when they, in their turns, address the public.

"Most important of all, when preparing a release, have it earnestly in mind that the first member of the public who reads and tries to understand the release is the newspaper man. If the newspaper man doesn't understand your release, the public won't. For the newspaper man won't even pass it on to the public.

"If the subject of your release is too technological for a layman's understanding, forget it. Toss it away—before the editor does. There'll be another day, with a subject that can be translated into the public's talk."

* * *

Engineers, as a whole profession, and engineers in their respective branches of the profession, have a great story to impart to the public—a public which takes for granted the multitudinous developments that have made civilization possible, that have made possible every day living. The public takes all these astounding accomplishments for granted without often enough realizing the intellect and drama and striving that went into them, because engineering has not yet, except in the instances of some individual societies, undertaken the necessary and fascinating job of telling the public.

In an address of public relations made at Notre Dame, Thomas J. Ross, of New York, senior partner in the eminent public relations firm of Ivy Lee and T. J. Ross, made this observation: "Public relations presupposes belief in the simple idea that when people are correctly informed, their judgments of men and events, as well as on products and services, are usually sound. . . . Public relations is an active function of management — of seeking to deserve, obtain and protect a favorable public attitude."

And, in an address before the National Coal Association, Mr. Ross found occasion to comment:

"Public relations may be considered by some as something that anybody can do if you just pin the right label on him and tell him he is it and go about your business serene in the notion that your public relations are all fixed."

Well, you just don't accomplish good public relations that way. It is true that some engineering societies do not have the funds to permit a full department of public relations. An engineering society is dependent largely on its dues and its activities are measured accordingly, whereas the activities of a manufacturing industry are expandable as sales and earnings increase. The ideal arrangement, of course, is to have the counsel of a professional public relations man. But if you can't afford a full-time professional public relations employee or consultant, don't feel at all defeated. Again, you do have, in your society and in your area, a great public story to tell the public.

Of the many channels of *adequate communication* most commonly used, and often the most useful, are the press and the air waves. Put on your hat and go around and visit with these people and talk things over with them, or have a staff member do so, even though you aren't trained public relations practitioners and aren't able to engage one.

Very likely, you'll find them receptive and surprised that you have so much of interest to offer. In what you do in the conduct of the affairs of your Society you are in the public relations business. Certainly that is so as to your members, though you probably would call it "member relations." And since you thus are in a sense in the public relations business and since you can't afford a professional public relations practitioner, take on this chore of seeing these people.

We need to get out of the chair on the porch and do some striving. And we need to remember that we're talking to laymen—to Republicans and Democrats and carpenters and run-of-the mill folks. People don't talk polysyllabically in their homes or offices or in casual meetings with friends.

Polysyllables scare people. And when the polysyllables are technological, people start looking at wrist watches and mumble about other engagements. Short, simple words are very attractive. Use them when you're talking or writing to the public about engineering. A monosyllable can say a lot.

But, alas, even the word "monosyllable" is polysyllabic!

Engineers, when you're talking or writing to the public, mind your language!

The Haines Company

Ventilation & Air Conditioning Contractors

Sheet Metal Fabricators

— Welding —

1931 WEST LAKE STREET

CHICAGO 12, ILLINOIS

SE eley 3-2765

Siragusa Scholarship Is Established at IIT

A $750-per-year scholarship bearing the name of Ross D. Siragusa, president of Admiral Corporation, has been established at Illinois Institute of Technology, Chicago.

The scholarship is being put into effect at the start of the current school year.

Funds to support the award for an extended period of years were raised by a group of Admiral Corporation distributors and turned over to Siragusa at a recent dinner marking his 50th birthday.

Students qualified to enroll at Illinois Tech who must have financial aid to secure a college education may apply to the Institute's scholarship committee to become candidates for the award.

Builders Conference To be Held Dec. 6-7

Coordinating research and development planning to meet building industry problems resulting from architectural innovations will be the theme of a Modern Builders Conference in Chicago Dec. 6 and 7.

Appropriately, the conference, dedicated to the advancement of building technology, will be held in the assembly hall of Chicago's new $40 million, 41-story Prudential Building.

The meeting, sponsored by Armour Research Foundation of Illinois Institute of Technology, will be devoted to consideration of research and development from the viewpoint of the architect, the materials manufacturer, the contractor and engineer, and the realtor and building operator.

Two sessions are scheduled for each of the two days. The first day will be devoted to research planning as the architect sees it, architect-builder coordination, and research in structural clay, wood, and concrete products.

Contractor-engineer and realtor-operator problems in material handling, prefabrication, interior surfacing, and services will be considered the second day.

A discussion period will follow each session.

Scientists Lower Boom on Booms

Scientists are lowering the boom on those annoying sonic "booms."

Sonic booms are the shock waves or sudden changes in air pressure that are caused when airplanes exceed the speed of sound.

Frequent cases have been reported of jet planes causing sonic (sound) booms that have shattered windows, shaken dishes off shelves, and unnerved citizens.

In an attempt to remedy the situation, an investigation is being conducted into the entire phenomenon of sonic shock waves by the Wright Air Development Center, Air Research and Development Command, Wright-Patterson Air Force Base, Ohio.

Scientists at Armour Research Foundation of Illinois Institute of Technology are carrying out one phase of this study.

The problem is not as widespread now as it may be when aircraft with supersonic speeds become more common, pointed out Dr. Vincent J. Cushing, manager of the Foundation's propulsion and fluid mechanics research department.

It is possible, he said, that the sonic booms could become quite annoying to residents near airfields, especially if the booms are repeated with any degree of frequency

Scientists probably will not be able to eliminate sonic booms, but they may be able to partially alleviate them, said Dr. Alfred Ritter, supervisor of ARF's aerophysics section.

The boom, he explained, merely follows the laws of nature and is caused by the motion of the airplane and the disturbances it produces in air pressure.

One phase ARF scientists are investigating, Ritter stated, is "the concentration of these disturbances and how the shock waves focus and coalesce."

The speed of sound is 760 miles per hour at sea level. When an airplane achieves a speed faster than sound it creates shock waves which are merely strong sound waves.

It is this sudden change in air pressure, Ritter explained, that occasionally causes windows to shatter and dishes to rattle. And when the ear receives this sudden and unexpected strong sound wave it can be quite frightening and sometimes even painful to the eardrums.

However, people may learn to live with the milder forms of sonic booms just as they have come to accept the once strange and frightening noises of steamboats, trains, and automobiles.

Ritter said some factors which influence the strength of the shock wave on the ground are the speed of the plane. the size and shape of the aircraft, and the height at which it is flying.

From data gathered in this study, he pointed out, scientists may be able to specify altitudes and speeds for certain meteorological conditions at which damage may be eliminated.

Studies also will be made of the effects of cloud formations and atmospheric conditions on these shock waves.

A Better Man

Reading makes a full man; meditation a profound man; and discourse a clear man.

—Poor Richard's Almanack

WM. E. SCHWEITZER & CO.
General Contractors
2207 Dodge Avenue
EVANSTON, ILLINOIS
AMbassador 2-3489 GReenleaf 5-4414
☆ ☆ ☆
Contractors for Industrial Construction

Armour Continues Expansion

The second step in a $5 million expansion program will be taken this fall by Armour Research Foundation of Illinois Institute of Technology.

Construction will begin in November on a $575,000 addition to the Metals Research Building, it was announced by William M. Cousins Jr., ARF assistant director.

Rapid expansion in metals research has necessitated construction of the four-story addition at 3350 S. Federal St. on the Illinois Tech campus.

"The volume of metals research at Armour is at an all-time high," Cousins said, "and double the amount of the presently available space is needed to carry out the projects planned by the metals department."

The first building in the Foundation's $5 million expansion program — a $1,250,000 Physics and Electrical Engineering Research Building—was completed earlier this year. It houses the nation's first nuclear reactor for industrial research.

Plans call for the construction of two more buildings and the extension of an existing laboratory building.

When completed in 1966, Armour Research Foundation will have one of the most complete industrial research centers in the world.

Construction of the extension at the north end of the Metals Research Building is expected to be completed by late spring 1957.

New research equipment, valued at approximately $175,000, will bring the total installation cost to in excess of $750,000, according to Cousins.

The extension will give the metals research department an additional 42,000 square feet of space. It now has 20,058 square feet in the present structure.

The 144-foot addition will be constructed of buff brick, steel, and tinted glass to conform with the general architecture of Technology Center, the name given to the 22-block area comprising the IIT campus.

The extension has been designed by internationally known architect Ludwig Mies van der Rohe, director of the IIT architecture department. Holabird, Root, and Burgee are the associate architects.

The basement of the new building will house a creep laboratory, mechanical equipment, and a storage area, Cousins explained.

A reception area and an applied metallurgy laboratory will occupy the first floor, while space on the second floor will be devoted to administrative offices, mechanical metallurgy and electrochemistry sections.

Space on the third floor will be utilized by the powder metallurgy and nuclear metallurgy sections, while the fourth floor will house the physical metallurgy and non-ferrous metallurgy laboratories.

Space in the extension also will be available for the Foundation's engineering economics and international departments.

Upon completion of the extension, the present Metals Research Building will contain the welding, foundry, and major heat treatment sections, as well as all special melting facilities such as vacuum melting of high-temperature alloys and arc melting of titanium.

The new addition will be completely air-conditioned with the exception of the precision treatment section. Because of the heat generated by this section, an air-cooling system will be installed instead.

DUNCAN ELECTRIC MANUFACTURING CO.

Watthour Meters, Demand Meters, Meter Mounting Equipment

Instrument Transformers

Lafayette Indiana

E.S.P.S. Completes A Registration Study

The Chicago Office of the Engineering Societies Personnel Service, Inc., has made a study recently of the registrations and job opportunities in their current or active files. This resulted in some interesting figures to the engineering and scientific professions.

Since the first of the year, the Chicago Office of the Engineering Societies Personnel Service, Inc., have averaged better than two and one half job opportunities for every many registered there which indicates that it is the ideal time to register with the Chicago Office, for any person who is interested in seeking new or better employment. The Chicago Office has now converted to 100% Employer Pays Fees.

Of the men's cards studied, 7% were over 55; 21% were under 35 and under $7,000 a year; 24% were under 35 and over $7,000 a year; and 48% were all others. This latter group can be divided into three main categories, namely: those who are sincerely trying to improve their economical and professional standing, those who are shoppers with no real interest in making a change, and those who have very specific and rigid requirements which eliminate most employers who might show some interest in them.

Of the jobs studied, 44% were at salaries of $7,000 a year and lower; 44% at salaries ranging from $7,000-$10,000 a year; and 12% over $10,000 a year.

The heaviest demand is 44% of the jobs where only 21% of the applicants are available. Only 25% of the employers still expect the applicant to pay his own fee.

Taking the above figures into consideration, the Chicago Office of Engineering Societies Personnel Service, Inc., requested its National Board of directors for permission to convert to the 100% "employer pays fees" plan. Approval was received to immediately convert to the plan.

Professional Directory

JOHN F. PARMER
Engineers

Designing — Structural System
Consulting — Industrial Bldgs.
Investigations — Foundations
Reports — Pavement
Supervision — Bridges

173 W. Madison St. — Chicago 2
FRanklin 2-4198

GREELEY AND HANSEN
ENGINEERS

Samuel A. Greeley — Kenneth V. Hill
Paul E. Langdon — Samuel M. Clarke
Thomas M. Niles — Paul Hansen (1920-1944)

Water Supply, Water Purification
Sewerage, Sewage Treatment
Flood Control, Drainage, Refuse Disposal
220 S. STATE STREET, CHICAGO 4

A. A. Lipsey & Associates
ENGINEERS

Structural Design
Industrial Buildings
Commercial Buildings
Foundations
Investigation
Reports — Appraisals

21 E. BELLEVUE — CHICAGO 11
WHitehall 4-3298

HAZELET & ERDAL

Consulting Engineers

Bridges — Foundations
Expressways — Dams — Reports
Monadnock Block
Chicago
403 Commerce Bldg., Louisville
Dixie Terminal Bldg., Cincinnati
Oding Bldg., Lansing

EDWARD J. WOLFF

ELECTRICAL . . .
MECHANICAL . . .

CONSULTING ENGINEERS
308 WEST WASHINGTON STREET
CHICAGO 6, ILLINOIS

STANLEY ENGINEERING COMPANY

Consulting Engineers

208 S. LaSalle Street — Hershey Building
Chicago 4, Illinois — Muscatine, Iowa

Alvord, Burdick & Howson

ENGINEERS FOR

Water Works, Water Purification, Flood Relief, Sewerage, Sewage Disposal, Drainage, Appraisals, Power Generation

20 N. Wacker Drive - Chicago 6

Telephone: CEntral 6—9147

◆

Battey & Childs

ENGINEERS
231 So. LaSalle Street
Chicago 4, Ill.

INDUSTRIAL PLANTS
POWER PLANTS
RAILROAD SHOPS & TERMINALS

DESIGN — SUPERVISION

◆

VERN E. ALDEN CO.
Engineers

Design and Supervision
of Construction

Industrial and Chemical Plants
Steam Power Plants

33 North LaSalle St.
Chicago 2

KORNACKER & ASSOCIATES, INC.

ENGINEERS

Bridges, Highways, Expressways and Railways, Building Structures, Industrial Plants, Supervision, Foundations and Soils, Investigations and Reports, Sewerage and Sewage Disposal, Surveys.

53 West Jackson Blvd.
Chicago 4, Illinois

Your Card* on this or the opposite page will acquaint others with your specialized practice.

*Restricted to Professional Architects and Engineers.

Professional Directory

◆

DE LEUW, CATHER & COMPANY

Consulting Engineers

Transportation, Public Transit and Traffic Problems

Industrial Plants
Railroads
Subways
Power Plants
Grade Separations
Expressways
Tunnels
Municipal Works

150 N. WACKER DRIVE, CHICAGO 6, ILL.

◆

ROBERT W. HUNT COMPANY
ENGINEERS

Inspection • Tests
Consultation
•
Engineering Materials
•
Cement • Concrete • Chemical
Physical and Metallurgical
Laboratories

175 W. Jackson Blvd., CHICAGO, And All Large Cities

SARGENT & LUNDY

ENGINEERS

140 S. DEARBORN STREET

CHICAGO, ILLINOIS

SILAS CARTLAND P.E.

Consulting Engineer
Designer

Air Conditioning,
Mechanical & Electrical
Systems for Buildings

911 Busse Hiway, Park Ridge
Ta 3-1300

E. R. GRITSCHKE
and
ASSOCIATES,
Incorporated

Consulting Engineers

Designers of
MECHANICAL and ELECTRICAL SYSTEMS
for BUILDINGS

11 S. LaSalle St., Chicago 3, Ill.

◆

SOIL TESTING SERVICES, Inc.

Consulting Engineers

John P. Gnaedinger
Carl A. Metz

Soil Investigations,
Foundation Recommendations and Design,
Laboratory Testing

3521 N. Cicero Avenue, Chicago 41, Illinois
Milwaukee, Wisconsin - Portland, Michigan
Kenilworth, N. J. - San Francisco, California
Havana, Cuba

◆

JENKINS, MERCHANT & NANKIVIL

Consulting Engineers

Municipal Improvements
Power Development
Traffic Surveys
Flood Control
Airports
Sewerage
Water Systems
Industrial Plants
Recreational Facilities
Investigations and Reports

805 East Miller Street
Springfield, Illinois

ESTABLISHED 1913

WALTER H. FLOOD & CO.

CHEMICAL ENGINEERS

Inspection and Testing
Of Materials and Structures
Buildings, Roads, Streets, Airports
SUPERVISION OF CONSTRUCTION
CONCRETE CORE CUTTING

6102 S. BLACKSTONE AVE. CHICAGO 37
Branch—1332-4 N. Westnedge Ave.
Kalamazoo 53, Mich.

Your Card* on this or the opposite page will acquaint others with your specialized practice.

*Restricted to Professional Architects and Engineers.

Engineering Societies Personnel Service, Inc.
Est. 1918

Chicago	Detroit	New York	San Francisco
84 E. Randolph St.,	100 Farnsworth Ave.,	8 W. 40th St.,	57 Post Street
ST 2-2748	TE 3-1090	WI 7-5878	SU 1-5720

The following items are furnished by the Engineering Societies Personnel Service, Inc., a non-profit, self supporting, personnel service sponsored by W.S.E., I.S.P.E., A.S.L.E., A.I.E.E., A.I.M.E., A.S.C.E., A.S.M.E., S.N.A.M.E., E.S.D., E.C.S.F. Replies should be addressed to the nearest office.

All positions and applicants clearing through the Chicago and Detroit Offices, are 100% EMPLOYER PAYS FEES. All others are subject to negotiation and may be applicant pays fees. In all cases our fees are moderate and based on what is needed to support this non-profit service. (Rates available on request.)

Members of the societies shown above may publish a free advertisement on this page by registering or listing at the nearest E.S.P.S. office. A weekly bulletin of Positions Open is available by subscription, at $3.50 a quarter for members and $4.50 a quarter for non-members.

DID YOU KNOW?

Did you know there are some experienced good men available between $7,500 and $12,000 a year?

Did you know starting salaries for Recent Graduates are running $400-$425 a month in practically all categories?

Did you know that this rate for Recent Graduates is running about the same regardless of location?

Did you know smaller communities are paying higher engineering and scientific salaries than large metropolitan areas?

Did you know there does not appear to be any salary pattern after the first year out of school?

POSITIONS AVAILABLE

C-5423 DEVELOP. PROJ. ENGR. EE or ME age 25-50; 5+ yrs. in des. or dev. of electro-magnetic or electronic services. Know electro-magnetics, elect. circuits, electronics, semi-conductors or mechanics. Duties: Resp. for planning & coordinating major long range dev. projects on indust. controls devices incl. magnetic amplifier & transistor types, for a mfr. of el. control, sal. $8500-12,-000 loc. Ill. empl. will pay the fee.

C-5424 DEVELOPMENT ENGR. EE or ME age 25-45; 3+ yrs. in dev. or des. of electro-magnetic or electronic devices, know electro-magnetic & el. circuitry electronics, semi-conductors or mechanisms. Duties: Conceiving & dev. new principles for indust. control devices incl. magnetic amplifier & transistors types for a mfr. of el. controls sal. $6500-8500 loc. Ill. empl. will pay the fee.

C-5425 DESIGNER EE or ME age 25-45; 3+ yrs. in electro-magnetics mechanisms, des, or dev. know materials & processes. Duties: Des. of indust. control devices, some trav. no car req'd for a mfr. of el. controls sal. $65-8500 loc. Ill, empl. will pay the fee.

C-5426 APPLICATION ENGR. EE or ME age 25-45; 3+yrs. in el. circuitry & control panel layouts des. know electro-magnetic & el. circuits. Duties: Application of indust. control devices to meet spec. customer requirements incl. solution of problems. Will incl. water control systems for automatic machines for a mfr. of el. controls sal. $65-85000 loc. Ill, empl. will pay the fee.

C-5431 AUTOMATION MGR. Grad. Engr. exp. in ind. measurement & control systems with sales ability, know promoting complete control syst. Duties: Resp. promoting complete control syst. ind. mgr. tech. dept. sales engrs. & customers Dev. & conduct training & promotion presentations of automation syst. resp. for laying out functional specs. for automation & data reduct. syst. for a mfr. of controls sal. $8-12,000 + bonus loc. Ohio, empl. will pay the fee.

C-5433 REGIONAL MGR. EE or Me age 35-45; 5+ yrs. supv. & sales of eng'rd. type products. Know pneumatic & automatic material handling eqpt. Duties: Resp. for all regional operations of 11 states covering sales, field engr. & field inst. handling conveyors, dispatch tubes, pallet loaders, blowers & cleaning & dryset systems for a mfr. of pneumatic eqpt. sal. $10,000 loc. Chicago, empl. will pay the fee.

C-5434 ELECTRONIC SR. ENGR. EE age to 50; 5+ yrs. des. dev. & system analysis of radar comm. etc. know military electronics. Duties: Des. eqpt. dev. processes & conducting research. High degree of independent thinking required for a mfr. of electronics sal. $7-11,000 loc. N.Y. empl. will pay the fee.

ENGINEERS AVAILABLE

550 MW SALES ENGR. EE 35; 2 yrs. sales & application engrg. elec. rotating mach'y. 2 yrs. business admin. exp. 2 yrs. des. & project eng. elect. machinery $78-8400 Midwest.

551 MW CONSTRUCTION ENGR. CE 24; Grad. upper ¼ class U. of Wis. 1955- 9 mo. constr. exp. in industry engrg. training in layout & supv. $6000 Midwest.

552 MW TOP MGMT. or EXECUTIVE ASST. MSME 35; 8 yrs. with consult. engrs. des. large steam power stations. Have bus. admin. & indust. engr. background & interests. Desire mgmt. position with challenge & responsibility, pref. in medium size mfg. co. $9500 West-Midwest.

553 MW PLANT ENGR. (Food Prod.) ME 65; exp. in drying-evaporation-refrigeration heating, ventilation-installation of eqpt. supv. depts. have engr. dept. exp. estimating-specification writing. $8500 Chicago Distr.

554 MW GEOLOGIST MS Geol. 37; 2 yrs. subsurface geology state survey, 3½ yrs.. major oil co., $6600 Midwest.

555 MW METALLURGICAL ENGR. (non-ferrous) BS Met. E. 32; 5 yrs. of non-ferrous prod. exp. in rolling & casting plus 2 yrs. sales engrg. & customer relations. A practical met. eng. looking for a job with a future & growth possibilities. $6500 Midwest.

556 MW TRADE ASSOCIATION or SALES. CE Adv. & mktg. cert. 33, exp. in sales & promotion of consumer goods. Have engrg. education & advt. background Open sal. Midwest.

557 MW PERSONNEL MGR. (Metal Working) 35, 5½ yrs. exp. as admin. engr. incl. hiring-salary adm. union neg. scheduling - budgeting - training - analyzation of cost. $9600 Midwest-West or East.

Energy Commission Accepts 63 Students

The U.S. Atomic Energy Commission has accepted the enrollment of 63 scientists and engineers, 50 of them from 24 foreign nations, for graduate studies in the Commission's International School of Nuclear Science and Engineering.

The school, operated for the Commission by the Argonne National Laboratory near Chicago in cooperation with North Carolina State College and Pennsylvania State University, was launched in 1955 as a part of the President's Atoms-For-Peace program. It is providing intensive unclassified studies in reactor technology and related subjects pending the establishment of adequate training facilities in regular educational institutions here and abroad.

After a week of general orientation in Washington under the auspices of the International Cooperation Administration which provides financial support for most of the foreign enrolees, the students were divided into two groups and reported on Sept. 10, at Raliegh, N.C. and State College, Pa. for the first 17-week part of their study.

Meanwhile, the third session students who have completed their work at these two universities will move on to the Argonne National Laboratory for advanced study and will be graduated on Jan. 11, 1957. The fourth session students then will take their places at Argonne.

This arrangement, inaugurated with the third session, makes it possible to about double the annual total of students that can be accepted for training. North Carolina State University and Pennsylvania State College were the first institutions to build and put into operation research reactors on their campuses.

The latest enrollment of 64 brings to 226 the total number of scientists and engineers receiving the comprehensive 34-week course. Of these, 167 have been from 38 foreign countries and the remainder, sponsored largely by U.S. firms interested in nuclear energy work, have been from the United States.

Students from Austria, Iran, the Netherlands and Uruguay are present for the first time in the newest group. The other nations represented are Belgium, Brazil, Chile, China, Egypt, France, Germany, Greece, India, Iraq, Israel, Japan, Korea, Spain, Sweden, Switzerland, Thailand, Turkey, and Yugoslavia.

Chicago Suburb has New Toxicology Lab

A new $150,000.00 Industrial Toxicology laboratory has been completed by Industrial Bio-Test Laboratories, Inc. in Northbrook, Illinois, a Chicago suburb, Dr. Joseph C. Calandra, Bio-Test president, announced Aug. 25. The air-conditioned laboratories cover 8,000 square feet.

According to Dr. Calandra, the new facilities provide industry with comprehensive biological evaluations at a time when new materials and chemicals used by the public are creating problems in public health and welfare.

"Industry wishes to safeguard the health of individuals coming in contact with these new materials," he said. "The new Bio-Test laboratories offer industry a practical solution to toxicity and related problems through the study of the toxicological and physiological properties of the new substances which industrial research is creating every day."

Bio-Test Laboratories provide modern and efficient facilities for the evaluation of the physiological and toxicological properties of chemicals on all forms of living organisms. Spacious animal quarters to accommodate all types of small and large experimental animals have been provided.

In addition, there are newly equipped laboratories for radioisotope studies and chemical research. A laboratory for inhalation studies and air pollution research and industrial bacteriology laboratories for work with bactericidal and fungistatic chemicals are included.

Facilities are available to study the pharmacologic activity of drugs and cosmetics. A separate section is fitted with balanced aquaria to aid in the study of the effects of water pollution on fish and other marine life.

A greenhouse for the study of agricultural chemicals and residues will be added to the facilities in the fall of 1956.

Transistors are Used In Carrier Equipment

Carrier equipment using transistors can be built with sufficient transmitter power to allow its general application for power line relaying, it was reported in San Francisco at the Summer and Pacific General Meeting of the American Institute of Electrical Engineers in the Fairmont Hotel.

According to W. C. Feaster, of the Potomac Edison Company, Hagerstown, Md., and E. E. Scheneman, Westinghouse Electric Corp., Baltimore, Md., tests of such equipment have disclosed that the use of transistors will result in less maintenance, a great reduction in the size of the carrier sets, requiring much less energy than tube type sets, with a reduction in battery and charger requirements.

Transistors have been used on the Potomac Edison power lines for as long as 14,000 hours and "show much better life than would be expected from tubes," they reported.

The two engineers explained that carrier current equipment has greatly increased in reliability since its first development, and components and circuits rarely cause failure.

—CUSTOM BUILT—

To Your Specifications

Switchboards, Benchboards, Panelboards, Steel Cabinets, Distribution Panels, Motor Control Centers, Junction Boxes, Raceways, Sheet Metal and Light Structural Fabrication, Busducts.

GUS BERTHOLD ELECTRIC CO.

1716 W. HUBBARD ST.
CHICAGO 22, ILL.
CHesapeake 3-5767

Reviews of Technical Books

Engineering

Engineering as a Career, by Ralph J. Smith, McGraw-Hill Book Company, Inc., New York 36, N.Y. 1956. 363 pages. $4.75.

This text has been compiled for use in an orientation course in engineering. It indicates the qualifications, duties, and responsibilities of engineers and explains the engineering profession in terms of functions as well as branches.

Smith says that this book is an outgrowth of experience gained in teaching such a course over the past ten years. He has emphasized the classification into the categories of research, development, design, production, construction, operation and maintenance, application and sales, industrial and management.

Since a basic presentation of the engineering approach to problem solution is given, the student is able to get a true perspective of "exercises"; also he will feel that he is on his way to becoming an engineer, for technical material is included that will test his aptitude for and interest in engineering training.

Ralph J. Smith, E.E., Ph.D. is Registered Professional Engineer Head, Engineering Department, San Jose State College.

R.G.G.

Metallurgy

Engineering Metallurgy, by L. F. Mondolfo and Otto Zmeskal, McGraw-Hill Book Company, Inc., New York 36, N.Y. 1955. 397 pages. Price $7.50.

This up-to-date text book was written for teaching metallurgy to engineers whose primary interests are not in the metallurgical field.

Mondolfo and Zmeskal have combined theory and practice in a style both simple and inclusive. Detailed descriptions of methods and operations are used, but the authors have emphasized the theoretical reasons behind the operations. Since unity of concept is of prime concern, as opposed to compartmentalization of individual metals' behavior, it is easy for the student to understand how and why metals behave as they do. Modern scientific and technical developments in this expanding field are given. Principles of casting, the physics of metals, and plastic working practices are presented.

L. F. Mondolfo is Professor of Metallurgical Engineering at Illinois Institute of Technology and Otto Zmeskal is Research Professor, College of Engineering, Department of Mechanical Engineering at the University of Florida. Their extensive experiences in all phases of engineering metallurgy have led to the inclusion of many original classroom problems and the use of interesting illustrations.

R.G.G.

Helicopter Engineering

Principles of Helicopter Engineering, by Jacob Shapiro, McGraw-Hill Book Company, Inc., New York 36, N.Y. 1956. 433 pages. Price $12.50.

This well-founded text has been written for the technician interested in helicopter design, production, inspection, maintenance, or operation.

Shapiro, a leading British helicopter-project engineer, treats the subject from an engineering viewpoint, emphasizing practical aspects. The book is "design oriented"; the author considers the point of view of the designer, whose interest is centered on the foundations and conditions of applicability of theoretical analysis, its results, and what may be gained from these deductions.

Rotating-wing analysis, the engineering principles of the elements of helicopter structures and mechanisms, and the embodiment of these principles in actual designs, are all stressed. Recent advances are also covered; this includes turbine and jet drive of helicopters, latest examples of mechanical design, new requirements, and compounding of helicopters and fixed wings.

Jacob Shapiro, Consulting Engineer, London, England, spent many years combining and organizing the results of his study in this complex field. To this he added material from many publications by governments, establishments, companies and individuals.

R.G.G.

Electricity

Basic Electricity, by Paul B. Zbar and Sid Schildkraut, McGraw-Hill Book Company, Inc., New York 36, N.Y. 1956. 84 pages. Price $1.75.

RETMA, the Radio-Electronics-Television Manufacturers Association has planned a program of instructional aids and compiled a series of basic laboratory manuals for use in training radio and television technicians in the vital field of electronics. Through these manuals, schools may develop a well-integrated, standardized program.

Zbar and Schildkraut are on the RETMA teaching staff and aim in *Basic Electricity* to provide a good background for specialized training in any branch of electronics. Current products, practices, and techniques of the industry are employed. The manual is written in clear, simple, easy-to-understand language. Basic principles are stated, explanations of specific instruments are given, and a discussion of circuit parameters is included. Each job is followed by questions that will test the student's understanding of the completed work.

R.G.G.

New Radar Sentinel Rises off New York

Fifty miles south of Nantucket Island and 230 miles east of New York City, a second radar sentinel is taking its place in the outer line of defense of the U. S. mainland—another new engineering feat, *Engineering News-Record* declares.

Launched from the drydock at Portland, Me., where it was constructed, the steel island was towed 250 miles to its position where workers aboard the "island" immediately dropped its eight temporary legs through 80 feet of water to the bottom. The launching and positioning of this second "Texas Tower," from Aug. 9 to 12, occurred almost exactly a year after the first tower was erected on George's Bank, 135 miles further north.

In outward appearance, the two towers will look very much alike, though there are some structural differences, as well as variations in the method of erection, the magazine says. Both are triangular steel structures, roughly 200 feet on a side and 20 feet in depth and contain living quarters for a complement of 60 men and space for machinery and equipment to serve the maze of radar equipment mounted on the top.

The older tower stands in 52 feet of water, the new in 80 feet. Key difference between the two structures is in the jacking devices. The first tower was raised by DeLong jacks, which operate much on the principle of a boy "shinnying" up a tree; the new tower was raised by Roebling jacks, which utilize strands of wire rope. (The latter system required that the full length of the pipe legs—both temporary and permanent—be constructed on the platform before putting out to sea, since no sections could be added at the job site, as was done on the first job.)

Erection procedure for the latest tower was to winch down the temporary legs to bearing on sea bottom, then raise the tower to its predetermined height of 67 feet above the water. Next, the three big permanent legs go down to bottom and are dredged from within until they reach a point 60 feet below the sea floor. Clamshell buckets and water jets are used to sink the big pipes, the magazine notes. Once in position, the main legs are sealed at the bottom with concrete. The hollow centers of the legs will house piping for service lines and provide inspection galleries.

Internally, the most significant change in construction is the use of open trusswork for supports, rather than sheet-metal bulkheads as in the first tower. The open steel work will provide easier access to various parts of the interior.

A total of five such towers, placed on coastal shelves and shoal areas, has been planned as a part of the radar protection of the U. S. East Coast. Radar-carrying ships will fill in gaps where water depths are judged too great—at the proper distance off-shore—for the permanent installations. One tower, however, will be placed in 200 feet of water, according to the magazine.

Electronics Display Includes 240 Exhibits

A record of 240 commercial exhibits were being displayed Oct. 1-3 at the 12th annual National Electronics Conference and Exhibition at the Hotel Sherman in Chicago.

This was 54 more than the previous high of 186 last year, pointed out Gordon J. Argall, exhibits chairman.

The conference is sponsored annually by the American Institute of Electrical Engineers, Institute of Radio Engineers, Illinois Institute of Technology, University of Illinois, and Northwestern University.

Also participating in the conference were Michigan State, Purdue, Michigan, and Wisconsin universities, as well as the Radio-Electronics-Television Manufacturers Association, and Society of Motion Picture and Television Engineers.

ASTM Fall Meeting To be Held Oct. 16

The Fall Meeting of the Chicago District, American Society for Testing Materials will be held Oct. 16 in the auditorium of the Western Society of Engineers in Chicago. The Chicago District Council of ASTM will present a panel discussion.

"Prediction of Materials and their Uses for 1976 and ASTM's Role" will be the subject used by the speakers.

Each panelist will speak for approximately 15 minutes, and will be followed by an open question and answer period.

The speakers will be:

J. J. Kanter, Directing Engineer, Engineering Laboratories, Crane Co., with the subject, "Future trends in metals;"

R. H. Bruce, sales manager, Molding Materials, Bakelite Corporation, with the Subject "Future trends in Plastics;" and A. Allan Bates, vice-president, Research & Development, Portland Cement Association, with the Subject "Future trends in uses of Portland Cement."

The fourth had not as yet been obtained but will be of comparable caliber of the men above and will speak on the subject of "Future trends in Petroleum."

The speakers have been asked to specifically develop the theme of their opinion of the materials and relative quantities of these materials that will be in use 20 years from now, and to give whatever justification they can for these opinions.

On Diligence

Diligence is the mother of good luck.
—Poor Richard's Almanack

THE
ASBESTOS & MAGNESIA MATERIALS CO.
INSULATION
Approved Contractors and Distributors for Johns-Manville
All types — Hot and Cold, Stack Linings and Boiler Coverings, Refractories, Packings and Insulating Brick
Diversey 8-4554 — 4562
2614 North Clybourn Ave. Chicago 14

WSE Personals

Jack E. Leisch, formerly chief of the Design Development Section of the U. S. Bureau of Public Roads and principal author in the development of *A Policy on Geometric Design of Rural Highways*, has joined the firm of DeLeuw, Cather & Co., engineers. A registered professional engineer, Leisch was graduated from the Maryland Institute of Art in 1931, the Baltimore Polytechnic Institute in 1932, and Johns Hopkins University with a degree in civil engineering in 1935. He served a total of 20 years in highway engineering with the Bureau of Roads.

* * *

Membership in the Million Mile Club has been conferred upon Edward A. Livingstone, vice-president, The Babcock & Wilcox Company, by United Air Lines officials. The club, one of the nation's most exclusive organizations, is composed of persons throughout the United States who have flown over one million miles on commercial airlines.

In presenting the plaque of membership, United Air Lines Pittsburgh Representative Richard MacLean said, "We welcome you into the Million Mile organization as one who has contributed to the progress of air transportation through your most extensive travel using commercial scheduled airlines."

In his reply, Livingstone, who is chief executive officer of the Tubular Products Division of The Babcock & Wilcox Company, said, "I was first introduced to commercial air travel in 1926 in a Ford tri-motored plane. Since that time, I estimate the air miles I have flown probably approach two million.

"With regular trips between Beaver Falls and New York, and our other plants in Milwaukee, Wis. and Alliance, Ohio, travel is a regular part of my business life. Trips outside the country come in for their share, too," the new "Million Miler" said.

* * *

An industrial relations expert and management consultant has been named assistant director of Armour Research Foundation of Illinois Institute of Technology, Chicago.

He is Clarence E. Watson, chairman of the department of industrial relations at the Technological Institute of Northwestern University.

In his new position, Watson will administer research program development relations with industrial and government sponsors, according to Dr. Haldon A. Leedy, ARF director.

Prior to joining the Foundation, Watson served on the Northwestern faculty for 15 years. As chairman of the industrial relations department, he was responsible for the administration of the cooperative plan of engineering education and was chief liaison professor between the Technological Institute and industry.

* * *

A faculty member and a graduate student at the Northwestern Technological Institute have won major awards from the American Society of Civil Engineers.

Lawrence T. Wyly, MWSE, professor of civil engineering, was named co-winner of the J. James R. Croes medal for outstanding contribution to engineering science in 1955.

John H. Schmertmann, candidate for a doctorate in civil engineering, won the Collingwood prize for junior members of the society.

The Croes medal, awarded annually for papers of high merit published in the ASCE *Transactions*, is being presented to Prof. Wyly and two others for their research paper on the cause of and remedy for fatigue failures in riveted and bolted structural joints.

Co-authors of the winning paper are Jack W. Carter, senior engineer at the Glenn L. Martin Co., Baltimore, and Kenneth H. Lenzen, instructor in civil engineering at Purdue University. The paper was written while all three authors were on the Purdue faculty.

Wyly is directing a truss bridge research project at NTI whose long-range purpose is to improve bridge design appreciably. He served on the Northwestern faculty for eight years prior to assuming the chairmanship of the structural engineering department at Purdue in 1946. He rejoined the NTI faculty in 1955.

Lenzen's research for the prize-winning paper was done in cooperation with the American Institute of Bolt, Nut, and Rivet Manufacturers while he was a research associate in civil engineering at NTI. He received his bachelor's and master's degrees from Northwestern.

Schmertmann, of Larchmont, N. Y., won the Collingwood prize for the best paper by a junior member to appear in the ASCE *Transactions* during 1955. A 1950 graduate of the Massachusetts Institute of Technology, he received his master's degree from Northwestern.

DON'T FORGET

When the public relations man or reporter contacts you about your new promotion or other good news, be sure to tell him you belong to WSE.

MV SS SERVICE

MISSISSIPPI VALLEY STRUCTURAL STEEL CO.

MEMBER OF ASCE

CHICAGO DECATUR ST. LOUIS FLINT

Bus Passengers will Stay Cool by "Bubble"

A new and unique air conditioning system, featuring individual passenger bubble cooling, has been developed for the Fifth Avenue Coach Line of New York. The bus was demonstrated for the first time on Aug. 26.

This marks the first successful attempt to design an air conditioning system for use in city bus transportation.

Still regarded in the experimental stage until after field experience, the system has been in development for over a year at The Trane Company, La Crosse, Wisconsin, air conditioning and heating equipment manufacturer.

Foremost obstacle was the developing of a system providing proper cooling for widely varying occupant load conditions.

In addition, past efforts required a separate engine to drive the air conditioning system, resulting in additional expense to the owner and weight to the coach.

The system, as tested at Trane, is designed to cool automatically a fully-loaded bus, including standing patrons, just as effectively as it does a load of only a few people.

The air is forced in and around each passenger, providing comfort through a sort of individual cool bubble.

Driven directly by the main engine, the system eliminates entirely the need for a separate engine. Located under the floor ahead of the engine at the rear of the bus, the Trane compressor enables the system to adjust to changing load conditions and still maintain constant cooling regardless of engine speed.

The condenser coil is positioned in the rear roof and utilizes cooling fans running at set speeds via a special main engine hydraulic drive arrangement.

Condenser fans at the rear above the windows draw air from the top of the coach through the condenser coil and discharge out the rear.

Lightweight evaporator coils, located beneath the floor on each side of the coach, remove the heat. All the air is filtered, cooled or heated automatically and is completely changed every minute. Cooled or heated air, driven by special radial fans, is circulated throughout, insuring comfortable conditions for all passengers.

Ductile Iron Has High Wear Resistance

Ductile iron has been found to have the wear resistance, toughness and strength necessary to insure a long, trouble-free service life in cable sheaves for overhead traveling cranes, M. T. Roberts, chief metallurgist at Harnischfeger Corp., Milwaukee, Wis., reports. The new metal has replaced cast iron in this application at the machinery manufacturing firm.

Besides a tendency to wear quickly under normal conditions, cast iron pulleys often broke as a result of high stress caused by wobbling of the cables. Ductile iron sheaves, it was found, had superior wear resistance, and cracking has been eliminated because of the new metal's higher yield and tensile strength and resistance to sudden shock.

The ductile iron cable sheaves have resulted in greater safety and less loss of production time, according to Roberts. Maintenance and material costs have also been reduced.

The castings are being produced for Harnischfeger by the Grede Foundries in Milwaukee and the Beloit Foundry at South Beloit, Wisconsin.

Ductile iron was discovered and developed by the International Nickel Company. Ductile iron bridges the gap between cast iron and steel, combining the low cost, machinability and process advantages of cast iron with the strength of steel.

IIT Gives Course on Industrial Diamonds

The nation's first course in the preparation and use of diamonds as industrial tools is being offered at Illinois Institute of Technology in Chicago.

The course — a non-credit evening class — is part of the educational program on shaped diamond tool technology established at Illinois Tech by Industrial Distributors, Ltd., of Johannesburg, South Africa.

The course, which started Sept. 17, will cover selection of diamonds for various uses, sawing and shaping for tools, and turning, boring, and wheel dressing, according to Dr. Frank D. Carvin, director of the IIT mechanical engineering department.

The course will include a total of three hours of lecture and three hours of laboratory instruction per week for 15 weeks. It will meet from 6:20 to 9 P.M. High school graduation, or its equivalent, and employment in the machine tool industry were the prerequisites for registration.

The class is being taught by Samuel E. Rusinoff, IIT associate professor of mechanical engineering.

Laboratory sessions are being held in ITT's new shaped diamond tool technology laboratory. The laboratory was assembled by the Illinois Tech mechanical engineering department under a $30,000 grant from the Diamond Research Laboratory of Industrial Distributors, Ltd.

The new laboratory is equipped with a battery of diamond saws, two diamond polishing machines, a conditioning machine (scaife resurfacing), two Hardinge precision lathes, an optical comparator, miscellaneous hand tools and instruments, and a supply of industrial diamonds for instruction and practice.

L. L. WELDY & ASSOCIATES

- **Sorgel Electric Company**
  Dry type Transformers • Saturable Reactors
  Air-cooled and Askarel Unit Substations
- **Sprague Electric Company**
  Capacitors for Power Factor Correction
- **Roller-Smith Corporation**
  Circuit Breakers • Switchgear • Uni-Bus Busway
- **Electrical Engineers Equipment Co.**
  (Industrial Representatives)
  Load Break Switches • Isolators
  High Voltage Cubicles

4201 Irving Park Road SPring 7-8575 Chicago 41, Ill.

WSE Applications

In accordance with the By-Laws of the Western Society of Engineers, the following names of applicants are being submitted to the Admissions committee for examination as to their qualifications for admission to membership into the Society in the various grades, i.e., Student, Associate, Member, Affiliate, etc. All applicants must meet the highest standards of character and professionalism in order to qualify for admissions, and each member of the Society should be alert to his responsibility to assist the Admissions committee in establishing that these standards are met. Any member of the Society, therefore, who has information relative to the qualifications or fitness of any of the applicants listed below, should inform the Secretary's office. The Secretary's office is located at 84 East Randolph Street. The telephone number is RAndolph 6-1736.

4-56 Merlin J. Adams, Chicago District Manager, I-T-E Circuit Breaker Co., 105 W. Adams St.

5-56 Marion E. McCreight, Engineer, Lighting Products, Inc., 1549 Park Ave., Highland Park, Ill.

6-56 Charles P. Johnson, Engineer, Illinois Bell Telephone Co., 208 W. Washington St.

7-56 Seymour L. Litchtenfeld, Partner, Melco Engineers, 222 W. Adams St.

8-56 W. J. Corriveau, Assist. Supt. Construction & Correspondent, Linde Air Products Co., 230 N. Michigan Ave.

9-56 William A. Swanson, Master Mechanic, Armour & Co., 1355 W. 31st St.

10-56 Ralph H. Major, Chief Highway Engineer, John F. Meissner Engineers, Inc., 308 W. Washington St.

11-56 Martin T. Dyke, President, Land-Air, Inc., 7444 W. Wilson Ave.

12-56 C. F. Boake, Entrepreneur, 120 S. LaSalle St.

13-56 Donald J. Easton, Assist. Chief Engineer, G. S. Blakeslee & Co., 1844 S. Laramie Ave.

14-56 Lewis T. Fenton (Rein.), Supervising Design Engineer, Commonwealth Edison Co., 72 W. Adams St.

Piasecki Aircraft Contracts to Aid Navy

Finding the answer to part of the U.S. Navy's minesweeping problem has been assigned to Piasecki Aircraft Corporation here.

It was announced Aug. 30th that the Navy's Bureau of Aeronautics awarded a contract to the company to conduct engineering research on a minesweeping system.

Today's contract is the fourth prime award from the Army and Navy recently announced by Piasecki Aircraft. Seven other prime contracts have been awarded the company, but not yet released for publication. Numerous other proposals are being evaluated by the armed forces.

Among these is the designing, ground testing and wind tunnel testing of a new vertical lift concept (VTOL) combining the versatility of the helicopter with the capabilities of high, level flight speed, for the Navy.

Another includes the original design of an unmanned, remotely controlled configuration named *Sea Bat*, also for the Navy. It will have the capability to "hang in the air" and maneuver in any direction under complete electronic control.

In addition, the company also has a contract for designing, manufacturing and flight testing a radically new low-cost helicopter rotor that will greatly reduce the cost of rotary wing aircraft. This is being developed for the U. S. Army's Transportation Corps' Research and Development Command.

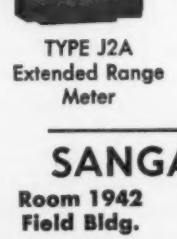
Piasecki is working on advanced designs of "flying crane" helicopters greater in size and capabilities than any now in existence. They would lift up to 16 tons, distances up to 100 miles. These designs are for the U.S. Army's Transportation Corps' Research and Development Command.

Rubber Bags May Help Transport Oil

Rubber bags are being tried as containers for oil products to be transported by airplanes, reports *Petroleum Week*. The new transport method was developed by an Australian oil company to reduce transport costs. Big advantage of the bags over steel drums is that they can be folded up to make room for other cargo on return flights. The bags are placed in position in the planes, then filled from underground storage tanks. At their destination, they are emptied by pumping or by gravitation, then folded to a minimum size for the return trip.

Pretty Tires

Colored tires for the family car might be on the market soon, according to *Chemical Week* One company already has made experimental tires of varied hues.



TYPE J2A
Extended Range
Meter

THOSE WHO KNOW
CHOOSE
SANGAMO
Watthour Meters
Current Transformers
Time Switches

TYPE RC-6B
Current
Transformer

SANGAMO ELECTRIC COMPANY
Room 1942
Field Bldg.
135 South LaSalle St.
Chicago 3, Illinois
Telephone
STate 2-0438

Obituaries

The Western Society of Engineers has recently been notified of the following deaths:

Miss Clara E. Lawrence, affiliate member of the Western Society of Engineers since 1948, died on September 12, 1956. She was secretary-treasurer of William B. Lucke Inc. She was a former president of the Illinois Federation of Business and Professional Women's Clubs.

* * *

Langdon Pearse, member of the Western Society since 1910, and a life member since 1941, died on July 20, 1956. Mr. Pearse had been a sanitary engineer with the Sanitary District of Chicago for many years.

* * *

James H. Brace, president of Fraser-Brace Engineering Company, Limited, Montreal, Canada, died April 10, 1956. Mr. Brace had become a member of the Western Society in 1894, and had been a life member since 1931.

* * *

Laurence P. Keith, retired leader in the lumber industry, died June 21, 1956. He became of member of the Western Society in 1944. Mr. Keith retired in 1954 as Chicago manager of the National Lumber Manufacturers Association.

* * *

Harry C. Boardman, a member of the Western Society of Engineers since 1936, died August 6, 1956. Retired at the time of his death, Mr. Boardman had been director of research for the Chicago Bridge & Iron Company.

* * *

Elker R. Nielsen, president of the S. N. Nielsen Company, and a member of the Western Society since 1948, died August 5, 1956. He had been associated with the S. N. Nielsen Company since 1919.

* * *

Ralph H. Burke, eminent airport consultant and engineer, died August 23, 1956. Mr. Burke joined the Society in 1915 and became a life member in 1945. He was the owner of the firm of Ralph H. Burke. He served as airport consultant for Chicago, and contributed greatly to aviation in the area, supervising construction of O'Hare and Meigs fields and other important projects.

Index of MIDWEST ENGINEER *Advertisers*

Abbott Contractors Inc. 15
Air Products, Inc. 12
Vern E. Alden 22
Aldis & Company 11
Alvord, Burdick & Howson 22
Asbestos & Magnesia Materials Co. 27
Asplundh Tree Experts 13
Battey & Childs 22
Bell Lumber & Pole Co. 14
Gus Berthold Electric Co. 25
John Burns Constr. Co. 8
Silas Cartland 23
Christie Corp. 15
Contracting & Material Co. 10
De Leuw, Cather & Co. 23
Duncan Electric Mfg. Co. 21
Federal Pipe & Supply Co. 8
Walter H. Flood 23
Greeley & Hansen 22
E. R. Gritschke & Associates, Inc. 23
The Haines Co. 19
Hazelet & Erdal 22
Robert W. Hunt Co. 23
Jenkins Merchant & Nankivil 23
F. J. Kornacker & Associates 22
Line Material Co. 6
A. A. Lipsey & Associates 22
W. H. Lyman Construction Co. 5
Mississippi Valley Structural Steel Co. 28
Murray Brothers 9
Nash Brothers Construction Co. 11
Fred L. Nelson of Dayton, Ohio 32
New Products Corp. .....Cover IV
Northern Illinois Gas Co. 4
John F. Parmer 22
Portland Cement Association .....Cover II
Sangamo Electric Co. 30
Sargent & Lundy 23
Wm. E. Schweitzer & Co. 20
Soil Testing Services 23
Stanley Engineering Co. 22
Valentine Clark Corp. 7
Viking Automatic Sprinkler Co. 9
L. L. Weldy & Associates 29
Edward J. Wolff 22

Help the Society help you!

Keep it posted on changes in your status

To make sure we have you listed correctly, if you change your status

MAIL FORM TO THE WESTERN SOCIETY OF ENGINEERS
84 E. Randolph St., Chicago 1, Ill.

Name:.....

Position:.....

Firm:.....

Firm Address:.....

Home Address:.....

Home Phone:..... Business Phone:.....

Management, Labor Discuss Technology

Representatives of management and labor will give their views on technological progress in industry at the opening session of the sixth annual Tool Engineering Conference in Chicago Nov. 2 and 3.

Dr. Harry Osborn, technical director of the Tocco division of the Ohio Crankshaft Co., Cleveland, will present management's viewpoint, and P. L. Siemiller, general vice president, International Association of Machinists, Chicago, will speak for labor.

Their talks will follow an address on "Research and Development for Industry" by Dr. Richard F. Humphreys, assistant director of Armour Research Foundation of Illinois Institute of Technology.

The conference, the theme of which is "New Horizons in Industry," will be held on the Illinois Tech campus.

IIT and Northwestern and Illinois universities are cooperating with the Illinois chapters of the American Society of Tool Engineers in sponsoring the meeting.

The "kick off" session, scheduled for 8 p.m., will be opened by Dale Long, first vice president of ASTE. Dr. F. D. Carvin, director of the IIT mechanical engineering department, will welcome the group.

President John T. Rettaliata, MWSE, of Illinois Tech will deliver an address at a dinner in the Commons Building, 3200 S. Wabash Ave., on Nov. 3. Prof. K. J. Trigger of the University of Illinois will be toastmaster.

The Nov. 3 morning program, starting at 9 o'clock, will feature panel discussions on "New Cutting Tool Materials" and "Economic Analysis in Machine Tool and Equipment Replacement."

The afternoon will be devoted to panel sessions on "New Developments in Extrusion Methods" and "Automation in the Metal Working Industry."

A luncheon program will include a talk on "Educational Facilities for Tool Engineers" by S. E. Winston, dean of the Illinois Tech evening division; welcoming remarks by Dr. Ralph G. Owens, MWSE, IIT dean of engineering, and "A Message from ASTE" by Howard McMillen, national president of the society. Richard Miller, chairman of the ASTE Chicago chapter, will be toastmaster.

Inquiries concerning the conference should be addressed to Prof. Samuel E. Rusinoff, Mechanical Engineering Department, Illinois Institute of Technology, Technology Center, Chicago 16, Ill.

Three to Consider Hydraulic Applications

Hydraulic applications in the design and operation of nuclear reactors were to be discussed by three atomic energy specialists at the 12th annual National Conference on Industrial Hydraulics to be held in Chicago Oct. 18 and 19.

Dr. Richard F. Humphreys, assistant director of Armour Research Foundation of Illinois Institute of Technology, will speak on "Reactor Principles and Types." He was instrumental in initiating the research program at the Foundation.

Frank R. Ward, assistant director, atomic energy division of Babcock and Wilcox Co., New York, will describe the 250,000 kilowatt atomic power plant the company is designing and developing for Consolidated Edison Co.

"Reactors of the Future" will be discussed by Stuart McClain, program coordinator, Argonne National Laboratory.

They will address the opening general session of the conference at the Hotel Sherman.

The conference is sponsored by Illinois Tech and Armour Research Foundation, in cooperation with several engineering societies and more than 100 industrial organizations.

Coleman Gives Idea On Good Business

Employers should recognize abilities rather than disabilities in hiring a man or woman for a job, John S. Coleman, president of the Chamber of Commerce of the United States, said Sept. 13 in a statement keyed to the National Employ the Physically Handicapped Week, October 7-13.

Physical fitness, he pointed out, is a relative thing and must be judged in relation to a specific job.

Coleman stated:

"Handicapped persons are being employed successfully in almost every type of job in American business today. It is heartwarming to note that employers are constantly expanding their use of this valuable addition to their workforce by identifying jobs in terms of physical requirements.

"We now know that handicapped workers do not want sympathy, special consideration or favoritism. They simply want the same respect as other human beings and the chance to compete on a just and equal basis with the able-bodied.

"Employing the physically handicapped is not a charity; it is just good business."

Sweet Carbon

After experimenting with a number of binding materials to mix with anthracite, including starch, the Mining Bank —a government department in Peru— found that molasses was ideal for the manufacture of coal briquettes, reports *Coal Age.*

FRED L. NELSON OF DAYTON, OHIO

Line Clearance for Public Utilities

Home office —
1014 Callahan Bldg.
Dayton 2, Ohio

Illinois office —
1226 Black Road
Joliet, Illinois

ORIGINATORS OF DROP CROTCH AND LATERAL METHOD OF TRIMMING

Our First
Responsibility
GIVE
167 Local Red Feather Services
Community Fund of Chicago

TODAY

IN PRODUCING PRECISION ZINC, ALUMINUM AND MAGNESIUM DIE CASTINGS FOR A BROAD RANGE OF INDUSTRIES, NEW PRODUCTS CORPORATION HAS BUILT A FOUNDATION OF SKILLED CRAFTSMEN BASED ON THE USE OF TECHNICAL SCIENCES. TOOLING SPECIALISTS HAVE REACHED THE LEVEL OF ARTISANS THROUGH TAKING PRIDE IN WORKMANSHIP. THEIR EFFORTS PRODUCE THE

TODAY IS THE M O L D FOR TOMORROW

IN WHICH METAL IS CAST TO CREATE THE FINISHED PRODUCT. IN THE SAME WAY, YESTERDAY WAS THE MOLD FOR TODAY AND TODAY IS THE MOLD FOR TOMORROW. THE FIRM TRADITION OF INTEGRITY, QUALITY AND DEPENDABLE SERVICE IN THE PAST IS THE MOLD THAT IS BUILDING FOR A BETTER TOMORROW.

NEW PRODUCTS CORPORATION

448 NORTH SHORE DRIVE • BENTON HARBOR 1, MICHIGAN

TOMORROW